

IMMUNOLOGY AND ALLERGY

QUESTIONS

Volume 1.

Dr. Okasha.

1. A 14-year-old girl has been suffering from asthma for the last 3 years. She is using albuterol pump daily. She also used steroid occasionally. Pulmonary function test (PFT) was performed. Which of the following result is appropriate for this patient?

- a) Increased residual volume (RV), decreased vital capacity (VC), decreased forced expiratory volume (FEV1)
- b) Decreased RV, decreased VC, decreased FEV1
- c) Decreased RV, increased VC, decreased FEV1
- d) Increased RV, increased VC, increased FEV1
- e) Decreased RV, decreased VC, increased FEV1

Ans.... (a) An asthma patient's PFT result usually reveals increased RV, functional residual capacity (FRC), and total lung capacity (TLC); decreased VC, forced vital capacity (FVC), FEV1, and peak expiratory flow rate (PEFR).

2.. A 10-year-old girl appeared in the ER with acute asthma attacks. The girl improved with inhalation bronchodilator therapy. She usually receive oral prednisone at home. The next step in management:

- a) Increase oral prednisone doses
- b) Start inhaled steroid and discontinue oral steroid
- c) Resume theophylline along with oral steroid
- d) Reduce oral prednisone doses
- e) Give both inhaled and oral steroids

Ans.... .(b) Start inhaled steroids and discontinue oral steroids

3. A child had been suffering from asthma for the last 2 years. The condition worsens since his parents purchased a dog and a cat. Most likely cause for worsening asthma:

- a) Only dog can produce asthma
- b) Only cat can produce asthma
- c) None of them produce asthma
- d) Both of them produce asthma
- e) Properly washed animals and their company is good for asthma patient.

Ans....  (d) Both cats and dogs can produce asthma

4. A child is diagnosed with allergic rhinitis. He is allergic to pollen and dust mites. The child may develop in future:

Dr-Faqehi

- a) Anaphylactic reaction to immunization
- b) Allergy to medication
- c) Asthma
- d) Otitis media
- e) Nasolacrimal duct obstruction

Ans....  (c) A patient with allergic rhinitis can develop asthma

5. A 3-month-old female infant appears in the ER with history of diarrhea for the last 2 to 3 weeks and rashes in the diaper and oral area for the last 10 days. Mother denies any fever and URI symptoms. Past medical history reveals otitis media and pneumonia. Physical examination reveals failure to thrive (FTT), oral and perineal candidal infections. Most likely diagnosis:

- a) Severe combined immunodeficiency (SCID)
- b) Chronic granulomatous disease
- c) Milk intolerance causing diarrhea
- d) Marasmus
- e) Kwashiorkor

Ans....📌📌📌 (a) SCID patient appears with FTT, and recurrent infections (e.g., Candida albicans, Pneumocystis carinii, CMV, Epstein-Barr virus).

6. First antibody appears in body:

- a) IgG
- b) IgM
- c) IgA
- d) IgD
- e) IgE

Ans....b) IgM

7. The most important diagnostic evaluation in a severe asthmatic patient:

- a) Chest X-ray
- b) Pulmonary CT scan
- c) Arterial blood gas (ABG)
- d) Pulmonary function test
- e) Radionuclide pulmonary scan

Ans...📌📌📌 (c) ABG is the most important

8. All of the following is recommended in an infant who is a high-risk for developing food allergy and atopic dermatitis except:

- a) Discontinue breast feeding if mother has eczema.
- b) Only breast feeding for first 4 to 6 months of life
- c) Use hypoallergenic milk
- d) Delay introduction of solid foods until 4 to 6 months of age.
- e) Delay introduction of cow's milk until 1 year of age.

Ans....📌📌📌 a) Breast feeding should be continued

9. A boy developed anaphylactic reaction after a food intake. This reaction is due to:

- a) IgA
- b) IgG
- c) IgM

- d) IgD
- e) IgE

Ans...  (e) IgE

10.. A female child was admitted in the pediatric ward for anemia. Her hemoglobin was 6 mg/dL and hematocrit was 18. During the packed-RBCs transfusion, she developed severe anaphylactic reactions. The blood was returned to the blood bank for further checking. Blood transfusion was stopped immediately. The test results revealed that the girl received properly matched blood. Most likely diagnosis:

- a) Selective IgA deficiency
- b) Minor group incompatibility
- c) ABO incompatibility
- d) Rh-hemolytic disease
- e) Selective IgM deficiency

Ans....  (a) Selective IgA deficiency

11. A 14-year-old boy is diagnosed with asthma. He is receiving theophylline. His doctor wants to add zileuton. The next step in management:

- a) Increase theophylline
- b) Decrease theophylline by 20%
- c) Decrease theophylline by 30%
- d) Decrease theophylline by 40%
- e) Decrease theophylline by 50%

Ans..  .(e) Decrease theophylline by half.

12.. A male child developed severe anaphylactic reaction after IGIV (immune globulin intravenous). Most likely diagnosis:

- a) HIV
- b) IgM deficiency
- c) IgG deficiency

- d) Selective IgA deficiency
- e) IgE deficiency

Ans.....(d) Selective IgA deficiency.

13. Allergic rhinitis is mediated by:

- a) IgA
- b) IgG
- c) IgM
- d) IgD
- e) IgE

Ans.....e) IgE

14. Preferred therapy for exercise-induced asthma:

- a) Inhaled albuterol
- b) Oral theophylline
- c) Oral montelukast
- d) Inhaled salmeterol
- e) Inhaled cromolyn

Ans..... (a) Inhaled albuterol.

15. A 9-year-old boy was admitted to PICU for a severe asthma attack. He was receiving aminophylline continuous infusion. The serum theophylline level was normal. The least likely mechanism of action of theophylline:

- a) Diuretic effect
- b) Stimulates diaphragmatic muscles
- c) Increases endogenous catecholamines in circulation
- d) Relaxes bronchial smooth muscles
- e) Inhibitory effect on cyclic AMP

Ans.... e) Inhibitory effect on cyclic AMP

16. A 4-month-old male infant was receiving Similac with iron. He developed diarrhea. The formula was changed to soy-based formula. Then, he developed rashes and vomiting. Most likely diagnosis:

- a) Pyloric stenosis
- b) Viral gastritis
- c) Upper intestinal obstruction
- d) Gastroesophageal reflux
- e) Soy protein allergy

Ans..... e) Soy protein allergy

17. A 12-year-old boy is diagnosed with an intestinal obstruction. He is due for a surgical repair. He has been suffering from severe asthma attacks for the last 2 years. His asthma is usually controlled with a daily intake of oral prednisone and inhaled albuterol. The management to control his asthma prior to surgery should include:

- a) 100% oxygen by mask
- b) Albuterol inhalation
- c) Inhaled corticosteroids
- d) Intravenous corticosteroids
- e) Measure serum cortisol level

Ans.... (d) IV corticosteroids during the perioperative period is the appropriate management.

18. Most potent anti-inflammatory drug for treatment of allergy:

- a) Antihistamine
- b) Ibuprofen
- c) Corticosteroid
- d) Acetaminophen
- e) A & D ointment

Ans... .(c) Corticosteroid

19. In DiGeorge syndrome, the defect in the pharyngeal pouch:

- a) 1st and 2nd
- b) 2nd and 3rd
- c) 3rd and 4th
- d) 4th and 5th
- e) 5th and 6th

Ans... . (c) A defect in 3rd and 4th pharyngeal pouch cause DiGeorge syndrome

20. The true statement about T4/T8 ratio:

- a) Normal ratio is more than 1.0
- b) In AIDS patient, ratio is always reversed.
- c) A reversed ratio is an absolute sign of serious T cell deficiency.
- d) In advanced AIDS patient, there is loss of nearly all T8 cells.
- e) A reversed ratio should not be due to an error in handling specimen.

Ans....  a

21. A 2-year-old boy appears with fever (103°F) and cough for the last 3 days. Past medical history revealed three episodes of pneumonia, one episode of meningitis, and four episodes of otitis media. Blood culture is performed. The next diagnostic study:

- a) Spinal tap
- b) Chest X-ray
- c) Urine culture
- d) Serum immunoglobulins
- e) Lung CT scan

Ans....  (d) Bruton disease. The serum concentration of total immunoglobulin is less than 100 mg/dL.

22. A 10-year-old girl appears in a clinic for obesity. Her mother is concerned. The best way to confirm obesity:

- a) Weight
- b) Height
- c) Waist size
- d) Body mass index
- e) Arm circumference

Ans....  (d) Body mass index (weight/stature squared in Kg per meter squared).

23. Infants are predisposed to allergy:

- a) Dust
- b) Pollen
- c) Milk
- d) Cat
- e) Dog

Ans.....  (c) Milk products or egg.

24. Food anaphylaxis is mostly due to:

- a) IgA
- b) IgG
- c) IgE
- d) IgD
- e) IgM

Ans...  c) IgE

25. Functional characteristic of IgE:

- a) Protects from viral infection
- b) Protects from fungal infection
- c) Mediates allergic disease
- d) Protects from bacterial infection
- e) Protects from milk-protein allergy

Ans....  .c) Mediates allergic disease

26. The least likely complication of tonsillectomy:

- a) Referred ear pain
- b) Postoperative throat infection
- c) Halitosis
- d) Massive hemorrhage
- e) Anesthetic complications

Ans.. . (d) Massive hemorrhage is rare.

27. Which of the following statement suggests an immunodeficient child?

- a) Seven URI symptoms in the past 1 year.
- b) Four episodes of otitis media in the past 1 year.
- c) Oral thrush at 2½ months of age
- d) Five episodes of bronchitis in winter months.
- e) Three episodes of pneumonias in the past 12 months.

Ans.... . (e) Immunodeficient children develop recurrent pneumonias and/or meningitis

28. A 12-year-old female with a severe asthma is admitted for an acute appendicitis. She usually receives albuterol and prednisone. The appropriate management before surgery:

- a) Intravenous theophylline
- b) Intravenous hydration
- c) Cromolyn sodium
- d) Albuterol pump
- e) Intravenous corticosteroids

Ans..... . (e) The patient who receives steroids regularly should receive intravenous steroid before surgery to avoid hypotension.

29. A 12-year-old boy with asthma wants to participate in sports. The medication

recommended before sports to avoid exercise-induced asthma:

- a) Beta-agonist bronchodilator
- b) Theophylline
- c) Cromolyn sodium
- d) Antihistamine
- e) Corticosteroids

Ans....  a) Beta-agonist bronchodilator

30. A 6-year-old female asthmatic is intubated for a severe asthma attack. She was kept NPO and intravenous fluid therapy. She developed two episodes of generalized tonic-clonic seizures that were controlled with two anticonvulsants. Physical examination revealed heart rate 60 per minute, respiratory rate 22 per minute, blood pressure 134/87. The next appropriate step in management:

- a) Hyperventilation
- b) Epinephrine drip
- c) Propranolol
- d) Atropine
- e) Add another anticonvulsant

Ans....  (a) Asthama with cerebral edema.

31. A 10-month-old girl may be at risk to develop an atopy if she is exposed to:

- a) Another child with atopy
- b) URIs
- c) Smoking
- d) Non-allergenic formula
- e) Breast feeding

Ans....  (c) Exposure to smoking may increase the risk of atopy

[15/8 1:14 AM] 19 د فاطمة عاشور: A child appears with systemic lupus erythematosus (SLE)-like syndrome without characteristic SLE serology. Most likely complement deficiency is:

- a) C 5
- b) C 6
- c) C 7
- d) C 8
- e) C 1q

Ans..... 19. (e) C1q deficiency

[15/8 1:15 AM] 59 د فاطمة عاشور: Most common cause of anaphylaxis noted in emergency department is:

- a) Medication allergic reaction
- b) Aerosol allergic reaction
- c) Food allergic reaction
- d) Insecticide allergic reaction
- e) Pesticide allergic reaction

Ans.... 59. (c) Food allergic reaction

[15/8 1:17 AM] 98 د فاطمة عاشور: The following statement is not true about lung function abnormalities in asthma:

- a) Peak flow morning-to-afternoon variation less than 20%
- b) Spirometry reveals low (forced expiratory volume) FEV1
- c) Spirometry reveals FEV1/FVC (forced vital capacity) ratio is less than 0.8
- d) Inhaled beta 2-agonist improve FEV1 12% or more
- e) Exercise causes worsening in FEV1 15% or more

Ans..... 98. (a) Peak flow morning-to-afternoon variation 20% or more and the items (d, e) are the main criteria consistent in asthma patients.

99. The most common cause of anaphylaxis occurring in the hospital is:

- a) Food

- b) Oral medications
- c) Fire ants
- d) Idiopathic
- e) Intravenous medication and latex

Ans....99. (e) Latex and intravenous medications(e.g., antibiotics, immunoglobulin, radiocontrast materials). Food allergy is the most common cause of anaphylaxis outside the hospital.

100. A 9-year-old boy was treated in the ER (emergency room) for an anaphylactic reaction secondary to insect sting. He improved significantly within 1 hour. His mother wants to take him home as soon as possible. The child should be observed in the ER for an least how many hours:

- a) 1 hour
- b) 2 hours
- c) 3 hours
- d) 4 hours
- e) 6 hours

Ans...100. (d) 4 hours. Over 90% of biphasic reactions (i.e., anaphylactic symptoms recur after apparent improvement) occur within 4 hours.

101. Pediatric autoimmune neuropsychiatric disorders (PANDAS) is associated with the following organisms:

- a) Streptococcus pyogenes
- b) Staphylococcus aureus
- c) E. coli
- d) Herpes simplex virus
- e) Pseudomonas

Ans.....101. (a) Streptococcus pyogenes

[15/8 1:19 AM] 175 د فاطمة عاشور: All of the following are clinical manifestations in patients with T-cell deficiency except:

- a) Otitis media
- b) Rhinitis
- c) Mucocutaneous candidiasis
- d) Pneumonia
- e) Chronic constipation

Ans....  175. (e) Chronic diarrhea is a clinical manifestation in T-cell deficiency.

176. The following statement is not true about patients with B-cell defects:

- a) The clinical manifestations appear within first 2 months of age.
- b) The clinical manifestations may include recurrent otitis media, pneumonia, meningitis, bacteremia, and bronchitis.
- c) *S. pneumoniae* and *H. influenzae* type b infections are more common in patients with IgG2 deficiency, X-linked agammaglobulinemia, or common variable immunodeficiency.
- d) Allergies and autoimmune disorders are common in selective IgA deficiencies.
- e) The patients with hyper-IgM syndrome may present with recurrent neutropenia, hemolytic anemia, or aplastic anemia.

Ans....  176. (a) The clinical manifestations appear after 5–6 months of age due to protective effects of maternal antibodies.

177. A 14-month-old boy required a left myringotomy tube placement due to recurrent ear infections. The following investigation can lead to this diagnosis:

- a) ESR
- b) X-ray sinuses
- c) Head CT-scan
- d) Throat culture
- e) Serum immunoglobulin levels

Ans.....  177. (e) Serum immunoglobulin deficiency can cause recurrent ear infections (e.g., 3 or more episodes within 6 months, or 4 or more episodes within 12 months).

178. Intravenous immunoglobulin (IVIG) is the preferred therapy for patients with primary antibody deficiencies. IVIG can cause anaphylactic reaction in the following condition:

- a) IgG deficiency
- b) IgM deficiency
- c) IgA deficiency
- d) IgE deficiency
- e) IgD deficiency

Ans..... 178. (c) The patients with IgA deficiency can develop antibody against the minute amounts of IgA present in IVIG and can produce anaphylactic reaction

[15/8 1:30 AM] 444 د فاطمة عاشور: The risk of an allergic disease in a child when one parent is allergic is:

- a) 5%
- b) 10%
- c) 25%
- d) 50%
- e) 66%

Ans..... d) 50%

445. The risk of allergic disease in a child when both parents are allergic is:

- a) 25%
- b) 50%
- c) 66%
- d) 75%
- e) 100%

Ans....c) 66%

446. All of the following chromosomes have been strongly associated with atopic

diseases except:

- a) 5
- b) 6
- c) 11
- d) 12
- e) 13

Ans....  (e) Chromosome 14 is also associated with atopic diseases.

447. All of the following chromosomes have been linked with an atopic dermatitis by genome screens except:

- a) 1
- b) 3
- c) 17
- d) 20
- e) 21

Ans....  447. (e) Chromosome 21 is not also associated with atopic dermatitis.

[15/8 1:32 AM] 525. د فاطمة عاشور: A child was eating fresh fruits and vegetables. Suddenly, he develops a rapid onset of pruritus, tingling, and tightness of the throat. A physical examination reveals angioedema of the lips, tongue, palate, and throat. The most likely diagnosis is:

- a) Allergic eosinophilic esophagitis
- b) Food-induced pharyngitis
- c) Food-protein tonsillitis
- d) Food-induced glossitis
- e) Oral allergy syndrome

Ans...  525. (e) Oral allergy syndrome is an IgE-mediated hypersensitivity reaction due to local mast cell activation by fresh fruits and vegetable proteins that cross react with birch pollen and ragweed pollen.

526. All of the following disorders of phagocytic functions are autosomal recessive except:

- a) Chediak-Higashi syndrome
- b) Specific granule deficiency
- c) Leukocyte adhesion deficiency 1
- d) Leukocyte adhesion deficiency 2
- e) Hyperimmunoglobulin E syndrome

Ans....526. (e) Hyperimmunoglobulin E syndrome is autosomal dominant.

[15/8 1:32 AM] 532 د فاطمة عاشور: The short-term adverse effects in a patient with atopic dermatitis who received phototherapy include all of the following except:

- a) Erythema
- b) Skin pain
- c) Pruritus
- d) Skin cancer
- e) Pigmentation

Ans.... 532. (d) Skin cancer

533. The long-term adverse effect in a patient with atopic dermatitis who received phototherapy is:

- a) Hyperpigmentation
- b) Hypopigmentation
- c) Chronic pain
- d) Chronic itching
- e) Predisposition to skin cancer

Ans....533. (e) Predisposition to skin cancer

[15/8 1:34 AM] 922 د فاطمة عاشور: The most common abnormality noted on

examination of blood in patients with a history of allergy is:

- a) High neutrophil counts
- b) High lymphocyte counts
- c) Low monocyte counts
- d) Low neutrophil counts
- e) High eosinophil counts

Ans...📌📌📌 922. (e) High eosinophil counts (i.e., more than 450 eosinophils per microliter of blood)

923. The preferred test for documenting the presence of allergen-specific IgE in the serum is:

- a) Methacholine test
- b) Skin test
- c) Serum IgE levels
- d) Provocation test
- e) Radioallergosorbent test (RAST)

Ans....923. (e) RAST

924. A child experienced life-threatening allergic reaction to an insect bite. The RAST is negative. The next step in management to confirm the diagnosis is:

- a) Skin test
- b) Methacholine test
- c) Repeat RAST
- d) Serum IgE levels
- e) Provocation test

Ans....924. (a) Skin test is more sensitive than RAST.

[15/8 1:45 AM] 960. د. فاطمة عاشور: Most of the patients with atopic dermatitis develop:

- a) Otitis media
- b) Chronic pharyngitis

- c) Chronic tonsillitis
- d) Chronic sinusitis
- e) Allergic rhinitis

Ans.... 

960. (e) About 80% of patients with atopic dermatitis develop allergic rhinitis and/or asthma.

[15/8 1:46 AM] 990. د فاطمة عاشور: A 10-year-old girl appears with recurrent urticaria, arthritis, and limb pain. This condition is associated with all of the following except:

- a) Elevated ESR
- b) Recurrent fever
- c) Hypogammaglobulinemia
- d) Renal amyloidosis
- e) Progressive nerve deafness

Ans....  990. (c) Hypergammaglobulinemia is an associated finding in Muckle-Wells syndrome.

991. The inhalant insect allergy occurs most likely due to:

- a) Protein induced IgM-mediated
- b) Carbohydrate induced IgE-mediated
- c) Lipid induced IgE-mediated
- d) Lipid induced IgA-mediated
- e) Protein induced IgE-mediated

Ans.....991. (e) A variety of proteins derived from insects become airborne and induce IgE-mediated respiratory responses.

992. The localized skin responses (e.g., pain, swelling, itching) secondary to biting insects are most likely due to:

- a) Protein induced IgM-mediated

- b) Lipid induced IgG-mediated
- c) Carbohydrate induced IgA-mediated
- d) Protein induced IgG-mediated
- e) Vasoactive materials derived from saliva

Ans....992. (e) Vasoactive materials (e.g., histamine, acetylcholine, kinins)

993. All of the following are clinical manifestations of inhalant insect allergies except:

- a) Asthma
- b) Conjunctivitis
- c) Urticaria
- d) Seasonal rhinitis
- e) Perennial rhinitis

Ans.....993. (c) Urticaria occurs in localized skin reaction.

994. The preferred therapy for patients with an inhalant allergy is:

- a) Cold compress
- b) Analgesic
- c) Immunotherapy
- d) Antihistamine
- e) Avoidance of the insects

Ans....994. (e) Avoidance of the insect

995. The therapies for patients with an insect bite may include all of the following except:

- a) Cold compress
- b) Oral analgesic
- c) Oral antihistamine
- d) Topical antiitching medication
- e) Oral antibiotics

Ans.....995. (e) The use of an oral antibiotic is not indicated unless there is a secondary infection. The venom has some antibacterial actions.

996. The cockroaches have all of the following allergic proteins except:

- a) Proteases
- b) Lipocalin
- c) Troponin
- d) Tropomyosin
- e) Ptyalin

Ans....996. (e) Ptyalin is absent in cockroaches

Volume 3.

Dr. Zeinab.

[15/8 12:46 AM] 328. د زينب: 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

Ans... 🏹🏹🏹 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.

[15/8 12:46 AM] 333. د زینب: 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

Ans....  333. 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

Ans....  334. e) Epicutaneous skin tests

[15/8 12:47 AM] 339. د زینب: The specific antigen for patients with a drug-induced lupus is:

- a) Histone
- b) Ro/SSA
- c) La/SSB
- d) Pm-Sci
- e) Sm

Ans..  .339. a) Histone

[15/8 12:47 AM] 343. د زینب: 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

Ans...  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.

[15/8 12:48 AM] 664 د زینب: The preferred screening test for patients with complement defects is:

- a) C 3
- b) C 4
- c) C 1
- d) C 2
- e) CH50

Ans....  664. e) CH50 measures the intactness of the entire complement pathways. Extremely low CH50 values are characteristic of genetic deficiencies in the complement system.

665. The most common cause of an abnormal CH50 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

Ans....  665. e) A delay or improper transport of the specimen to the laboratory is the most common cause of abnormal CH50 values.

666. The most common B-cell defect is:

- a) Selective IgA deficiency
- b) IgG deficiency
- c) IgM deficiency
- d) IgE deficiency
- e) IgD deficiency

Ans...  a) Selective IgA 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

Ans....  .667. a) Chediak-Higashi syndrome (CHS) is an autosomal recessive disorder. CHS has a tendency to develop severe lymphoma-like syndrome.

668. The preferred screening test for patients with a chronic granulomatous disease is:

- a) G6PD qualitative assay
- b) RBC G6PD activity
- c) Dihydrorhodamine 123 fluorescence (DHR) test
- d) Ability of neutrophils to kill microorganisms
- e) Ability of monocytes to kill microorganisms

Ans.....  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. The most common type of reaction to sulfonamide drug is:

- a) Macular
- b) Papular
- c) Maculopapular

- d) Pustular
- e) Urticarial

Ans...  .c) Maculopapular

670. The insect allergy is mediated by:

- a) IgG
- b) IgM
- c) IgA
- d) IgE
- e) IgD

Ans....  .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.

101. A patient with bronchial asthma develops persistent atelectasis of the left lung. A combined therapy with bronchodilators and corticosteroids fails to improve an atelectasis. The preferred therapy is:

- a) Prone position
- b) Vigorous chest physiotherapy
- c) Vigorous suctioning
- d) N-acetylcysteine
- e) Recombinant human DNase (rhDNase)

Ans...  e) Recombinant human DNase therapy reduces viscosity of purulent bronchial debris and resolves atelectasis. 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 atelectasis and cystic fibrosis.

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

Ans...  .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

Ans....  a) Sleep well without disturbance due to asthma

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

Ans..  .c) Asthma

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.

Ans... .a) All young children who experience wheezing, only a minority of them will develop asthma in later childhood.

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

Ans.... .d) Spirometry measures airflow and lung volumes during a forced expiration.

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

Ans... ..a) Latex allergy (about 50% of cases)

503. Latex allergy is due to the following:

- a) IgA-mediated
- b) IgG-mediated
- c) IgM-mediated
- d) IgE-mediated
- e) IgD-mediated

Ans... 📌📌📌...d) IgE-mediated latex allergy is due to a repeated exposure to latex allergen.

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

Ans... 📌📌📌...c) Latex allergy

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

Ans... 📌📌📌...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. 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

Ans... .b) Oropharyngeal itching or tingling and angioedema of the lips, tongue, palate, and throat are manifestations of oral allergy syndrome.

669. The most common type of reaction to sulfonamide drug is:

- a) Macular
- b) Papular
- c) Maculopapular
- d) Pustular
- e) Urticarial

Ans... .c) Maculopapular

670. The insect allergy is mediated by:

- a) IgG
- b) IgM
- c) IgA
- d) IgE
- e) IgD

Ans.....  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 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

Ans... .a) Allergic rhinitis; this patient has seasonal allergic conjunctivitis that is typically associated with allergic rhinitis and triggered by ragweed or grass pollens

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

Ans... .d) Atopic dermatitis is present in almost all patients with atopic keratoconjunctivitis that is the diagnosis in this patient. A large number of patients also have asthma

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

Ans.... .e) Staphylococcal blepharitis

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

Ans...  b) Autosomal dominant

753. The most common skin abnormality in children with an allergy is:

- a) Urticaria
- b) Atopic dermatitis
- c) Angioedema
- d) Keratosis pilaris
- e) Xerosis

Ans...  .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

Ans....  .d) CT-scan of the sinuses is the gold standard for patients with a sinus disease. Sinus diseases are common in patients with asthma. The treatment for occult sinus disease can improve asthma.

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

Ans.....a) Gastroesophageal reflux, rhinitis, and sinusitis are commonly noted in patients with asthma

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) H1 antihistamine antagonist
- d) Oral hydration therapy
- e) Intramuscular epinephrine

Ans.....d) Intravenous hydration (not oral hydration), intramuscular or intravenous H1 and H2 antihistamine antagonists, and inhaled beta-agonist are also used in patients with anaphylaxis.

757. The most cases of anaphylaxis is due to:

- a) IgG-mediated
- b) IgA-mediated
- c) IgM-mediated
- d) IgD-mediated
- e) IgE-mediated

Ans.....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

Ans.....a) Food; the plasma beta-tryptase level is usually not elevated in food-induced anaphylactic 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.



Volume 4.

Dr. Hajer.

[15/8 1:54 AM] د. هاجر على المسماري: A routine CBC result in a healthy newborn reveals the total lymphocyte count is 1950/mm³. The most likely diagnosis is:

- a) Normal
- b) Congenital CMV infection
- c) Congenital herpes infection
- d) Parvovirus infection
- e) Severe combined immunodeficiency (SCID)

Ans....الاجابه الصحيحه

E

The patients with severe combined immunodeficiency (SCID) have lymphopenia (less than 2,000 per mm³) at birth.



[15/8 1:54 AM] د. هاجر على المسماري: A 5-month-old boy appears with respiratory distress for the last 24 hours. He had two episodes of pneumonia and four episodes of otitis media and six episodes of diarrhea. He is delayed for his growth and development. A physical examination reveals bilateral rales and right otitis media. All of the following findings are true for this patient except:

- a) Total CBC lymphocyte counts are 1600/mm³.
- b) Chest x-ray reveals bilateral infiltrates.
- c) Blood culture is positive for *Streptococcus pneumoniae*.
- d) Serum immunoglobulin levels are elevated.
- e) Conductive hearing loss in the right ear.

الإجابة الصحيحة...Ans...

D

Serum immunoglobulin levels are decreased or absent in patients with severe combined immunodeficiency (SCID) disease and no antibodies are formed after immunizations.



[15/8 1:54 AM] د. هاجر على المسماري: Match the following disorders with functional deficiencies (75-79):

75. Wiskott-Aldrich syndrome

76. Ataxia-telangiectasia

77. Cartilage-hair hypoplasia

78. Major histocompatibility complex class II antigen deficiency

79. Lymphoproliferative syndrome

a) Low immunoglobulins, CD4 deficiency, and lack of T-cell responses to antigens

b) Thrombocytopenia, T-cell deficiency, and poor antipolysaccharide antibody production

c) Combined B- and T-cell defects of varying severity

d) Selective IgA deficiency and T-cell deficiency

e) Poor T-cell responses, autoimmunity, impaired apoptosis (programmed cell death), and increased bcl-2

الإجابة الصحيحة...Ans...

75/ b

Thrombocytopenia, T-cell deficiency, and poor antipolysaccharide antibody production



76/ d

Selective IgA deficiency and T-cell deficiency



77/c

Combined B- and T-cell defects of varying severity (e.g., defective antibody-mediated immunity, combined immunodeficiency, and severe combined

immunodeficiency)



78/a

Low immunoglobulins, CD4 deficiency, and lack of T-cell responses to antigens



79/ E

Poor T-cell responses, autoimmunity, impaired apoptosis, and increased bcl-2



[15/8 1:55 AM] د. هاجر على المسماري: child has partial DiGeorge syndrome. All of the following features are present except:

- a) Mild hypoplasia of thymus
- b) Otitis media
- c) P. carinii pneumonia
- d) Normal growth
- e) Mild hypoplasia of parathyroid glands

Ans.....الاجابه الصحيحه

C

P. carinii, fungi, and viruses attack the children with complete DiGeorge syndrome. Patients with partial DiGeorge syndrome experienced only mild infections.



[15/8 1:55 AM] د. هاجر على المسماري: The majority of the patients with ataxia-telangiectasia have the following clinical manifestation besides cerebellar ataxia and oculocutaneous telangiectasias:

- a) Adenocarcinomas
- b) Recurrent sinopulmonary infections
- c) Varicella
- d) Otitis media
- e) Lymphoreticular type malignancy

Ans.....الاجابه الصحيحه

B

Recurrent sinopulmonary infections (80% of cases)



[15/8 1:55 AM] 208 د. هاجر على المسماري: The most common type of malignancy in patients with ataxia-telangiectasia is:

- a) Cerebellar tumor
- b) Pituitary tumor
- c) Hemangiosarcomas
- d) Neurofibrosarcomas
- e) Lymphoreticular type

Ans.....الاجابه الصحيحه

E

Lymphoreticular type of malignancy



[15/8 1:56 AM] د. هاجر على المسماري: The mode of inheritance in patients with Wiskott-Aldrich syndrome is:

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

Ans....الاجابه الصحيحه

C

X-linked recessive



[15/8 1:56 AM] د. هاجر على المسماري: The laboratory findings in patients with Wiskott-Aldrich syndrome includes all of the following except:

- a) Elevated serum level of IgM
- b) Elevated serum level of IgA

- c) Elevated serum level of IgE
- d) Normal or slightly low IgG level
- e) Moderately reduced percentages of T cells

Ans...الاجابه الصحيحه

A

Low serum level of IgM



[15/8 1:56 AM] د. هاجر على المسمارى: Match all the diseases with clinical manifestations (510-514):

510. Wiskott-Aldrich syndrome

511. Ataxia-telangiectasia

512. Cartilage hair hypoplasia

513. Omenn syndrome

514. Hyper IgE syndrome

a) Recurrent staphylococcal abscesses, persistent pneumatocoles, and coarse facial features.

b) Chronic sinopulmonary disease and a high incidence of cancer

c) Prolonged bleeding from circumcision sites, bloody diarrheas, atopic dermatitis, and *S. pneumoniae* infections

d) Fatal varicella infections, redundant skin, hyperextensible joints of the hands and feet but an inability to extend the elbow completely.

e) Intractable diarrhea, exfoliative erythroderma, hepatosplenomegaly, and lymphadenopathy

Ans.....الاجابه الصحيحه

510/ c

Prolonged bleeding from circumcision sites, bloody diarrheas, atopic dermatitis, and *S. pneumoniae* infections.



511/ b

Chronic sinopulmonary disease and high incidence of cancer



512/ d

Fatal varicella infections, redundant skin, hyperextensible joints of the hands and feet but an inability to extend the elbow completely, short and pudgy hands.



513/ e

Intractable diarrhea, exfoliative erythroderma, hepatosplenomegaly, and lymphadenopathy.



514/ a

Recurrent staphylococcal abscesses (e.g., skin, joints, lungs), persistent pneumatoceles, coarse facial features, and hemihypertrophy



[15/8 1:56 AM] 515: د. هاجر على المسماري. The most common cause of eosinophilia in the USA is:

- a) Hyper IgE syndrome
- b) Inflammatory bowel disease
- c) Trichinosis
- d) Eosinophilic leukemia
- e) Allergy

Ans... الاجابه الصحيحه.

E

Allergy; acute allergic reaction may increase absolute eosinophil counts more than 20,000 cells/microL and chronic allergy reaction may rarely increase absolute eosinophil counts more than 2,000 cells/microL.



[15/8 1:56 AM] د. هاجر على المسماري. The most common cause of hypereosinophilic syndrome is:

- a) Idiopathic
- b) Malignancy

- c) Allergy
- d) Immunodeficiency disease
- e) Helminth infections

Ans.....الاجابه الصحيحه

A

Idiopathic



[15/8 1:57 AM] د. هاجر على المسماري: The most serious and life-threatening complication of hypereosinophilic syndrome is:

- a) Brain involvement
- b) Cardiac involvement
- c) Pulmonary involvement
- d) Hepatic involvement
- e) Splenic involvement

Ans.....الاجابه الصحيحه

B

Cardiac disease due to endomyocardial thrombosis and fibrosis



[15/8 1:57 AM] د. هاجر على المسماري: The preferred initial therapy in patients with hypereosinophilic syndrome is:

- a) Hydroxyurea
- b) Alpha-interferon
- c) Corticosteroids
- d) Methotrexate
- e) Partial exchange transfusion

Ans....الاجابه الصحيحه

C

Corticosteroids; answer (a) or (b) is used when corticosteroids therapy fails.



[15/8 1:57 AM] 519 د. هاجر على المسماري: All of the following are diagnostic criteria of hypereosinophilic syndrome except:

- a) Eosinophilia greater than 1,500 cells/micro L persisting more than 1 year.
- b) Eosinophilia greater than 1,500 cells/micro L persisting more than 6 months.
- c) Lack of another diagnosis to explain the eosinophilia
- d) Signs of organ involvements
- e) Symptoms of organ involvements

Ans.....الاجابه الصحيحه

A

Eosinophilia greater than 1,500 cells/microL persisting more than 1 year is an incorrect answer.



[15/8 1:57 AM] 520 د. هاجر على المسماري: The curative therapy in patients with chronic granulomatous disease is:

- a) Interferon-gamma
- b) Amphotericin B
- c) Prednisone
- d) Trimethoprim-sulfamethoxazole
- e) Bone marrow transplantation

Ans.....الاجابه الصحيحه

E

Bone marrow transplantation. Answer (a) is used before bone marrow transplantation. Answer (b) is used for aspergillus infections. Answer (c) is used for granulomas. Answer (d) is used for prophylaxis of infections.



[15/8 1:57 AM] 521 د. هاجر على المسماري: The curative therapy in patients with Chediak-Higashi syndrome is:

- a) High-dose ascorbic acid
- b) High-dose vitamin A

- c) Interferon-gamma
- d) Interferon-alpha
- e) Bone marrow transplantation

Ans.....الاجابه الصحيحه

E

Bone marrow transplantation. Answer (a) therapy improves the clinical conditions of some children when they are stable.



[15/8 1:58 AM] د. هاجر على المسماري Match all the different diseases with the laboratory tests (522-526):

522. Chediak-Higashi syndrome

523. Leukocyte adhesion deficiency-1 (LAD-1)

524. Leukocyte adhesion deficiency-2 (LAD-2)

525. Myeloperoxidase deficiency

526. Chronic granulomatous disease

a) Histochemical analysis reveals deficiency of neutrophils and monocytes enzyme.

b) Dihydrorhodamine 123 fluorescence (DHR) test detects oxidant productions.

c) Wright-stained blood films reveal large inclusions in all nucleated blood cells.

d) Lack of sialyl-Lewis X on the neutrophils

e) Flow cytometric measurements of surface CD1 1b in stimulated and unstimulated neutrophils using monoclonal antibodies directed against CD1 1b.

Ans....الاجابه الصحيحه

522/ c

Large inclusions in all nucleated blood cells that is seen on Wright-stained blood films and are accentuated by peroxidase stain.



523/ e

LAD-1 is diagnosed by flow cytometric measurements of surface CD1 1b in stimulated and unstimulated neutrophils using monoclonal antibodies.



524/ d

LAD-2 is diagnosed by lack of sialyl-Lewis X on the neutrophils.



525/ a

Myeloperoxidase (MPO) deficiency is diagnosed by deficiency of neutrophils and monocytes MPO.



526/ b

For screening test of chronic granulomatous disease, DHR test is replacing nitroblue tetrazolium (NBT) dye test. DHR detects oxidant production by increasing fluorescence when oxidized by H₂O₂.



[15/8 1:58 AM] 527: د. هاجر على المسماري: All of the following are physical examination findings in patients with allergic rhinitis except:

- a) Continuous open-mouth breathing
- b) Dark circles under eyes
- c) Longitudinal nasal crease
- d) Dental malocclusions
- e) Abnormal facial developments

Ans.....الاجابه الصحيحه

C

Allergic rhinitis has transverse nasal crease due to allergic salute (i.e., an upward rubbing of the nose with an open thumb or extended fingers). Answer (a) is known as allergic gape. Answer (b) is known as allergic shiners.



[15/8 1:58 AM] 528: د. هاجر على المسماري: A 10-year-old girl appears with nasal congestion, sneezing, itching, clear rhinorrhea, conjunctival irritation, loss of sense of smell, and difficulty in sleeping. A nasal examination reveals all of the following except:

- a) Bluish mucous membranes
- b) Purulent nasal secretions
- c) Swollen turbinates

- d) Edematous mucous membranes
- e) Mildly erythematous mucous membranes

Ans....الاجابه الصحيحه

B

This girl has allergic rhinitis. A thick, purulent nasal secretion indicates an infection.



[15/8 1:58 AM] 529 د. هاجر على المسماري: All of the following are effective prevention strategies in patients with allergic rhinitis except:

- a) For animal allergens in the home, the only effective measure is removal of the pet.
- b) HEPA filters reduce the airborne mold spores.
- c) Sealing the mattresses, pillows, and covers with allergen-proof encasing
- d) Bed linen and blankets should be washed every week in hot water (125°F)
- e) Air conditioning lowers the pollen exposure.

Ans....الاجابه الصحيحه

D

Bed linen and blankets should be washed every week in hot water (more than 130°F). Answer (c) is the most effective strategy for the reduction of mite allergen. The avoidance and removal of allergens are indicated.



[15/8 1:58 AM] 530 د. هاجر على المسماري: The majority of patients with allergic rhinitis have:

- a) Otitis media
- b) Tonsillopharyngitis
- c) Asthma
- d) Obstructive sleep apnea
- e) Secondary bacterial infections

Ans.....الاجابه الصحيحه

C

About 60% of patients with allergic rhinitis have asthma and even those who do not manifest with bronchial hyperresponsiveness. Chronic sinusitis is a common complication of allergic rhinitis.



[15/8 1:59 AM] د. هاجر على المسماري: Match all of the following medications and their effects on glucocorticoids metabolism and clearance (531-534):

531. Phenytoin

532. Rifampin

533. Ketoconazole

534. Erythromycin

- a) Delays glucocorticoid clearance
- b) Enhances glucocorticoid clearance
- c) Increases glucocorticoid metabolisms
- d) Delays glucocorticoid metabolisms

Ans....الاجابه الصحيحه

531/ c

Anticonvulsants (e.g., phenytoin, phenobarbital, carbamazepine) increase the metabolism of glucocorticoids.



532/ b

Rifampin enhances glucocorticoid clearance.



533/ d

Ketoconazole and oral contraceptives delay glucocorticoid metabolism.



534/ a

Erythromycin and clarithromycin delay glucocorticoid clearance.



[15/8 1:59 AM] 535: د. هاجر على المسماري: The following statements is true about

long-term inhaled glucocorticoids therapy and its effect on growth:

- a) Long-term inhaled glucocorticoid therapy has no effect on adult attained height.
- b) Long-term inhaled glucocorticoid therapy decreases the adult height by 2.5 cm.
- c) Long-term inhaled glucocorticoid therapy increases the adult height b 2.5 cm.
- d) Long-term inhaled glucocorticoid therapy decreases the adult height by 5.0 cm.
- e) Long-term inhaled glucocorticoid therapy increases the adult height by 5.0 cm.

Ans...الاجابه الصحيحه

A

Long-term inhaled glucocorticoid therapy has no effect on adult attained height or on bone mineral density. However, this therapy decreases the height by 1.1 cm in the first year of therapy indicating that the growth suppression is transient phenomenon.



[15/8 1:59 AM] 536: د. هاجر على المسماري: The most likely cause of oral thrush due to inhaled glucocorticoids is:

- a) Generalized immunosuppression
- b) Local immunosuppression
- c) Uncleaned oral cavity
- d) Direct irritation of the oral mucous membranes
- e) Predisposing oral ulcers

Ans.....الاجابه الصحيحه

B

Local immunosuppression



[15/8 1:59 AM] 537: د. هاجر على المسماري: All of the following are adverse effects of frequently administered beta-agonist therapy in patients with severe asthma except:

- a) Irritability
- b) Tachycardia

- c) Tremor
- d) Hypokalemia
- e) Hyponatremia

Ans..الاجابه الصحيحه

E

Hyponatremia is absent.



[15/8 1:59 AM] 538 د. هاجر على المسماري: The following monitoring is indicated when patients with severe asthma those who are receiving beta-agonist therapy frequently:

- a) Urine output
- b) Blood pressure
- c) Temperature
- d) EKG
- e) Pulse oximetry

Ans....الاجابه الصحيحه

E

Pulse oximetry is indicated because frequent beta-agonist therapy can produce ventilation-perfusion mismatch and hypoxia. Hypoxic patients should receive oxygen therapy.



[15/8 2:00 AM] 539 د. هاجر على المسماري: The important side effect of intravenous magnesium sulfate therapy in patients with asthma is:

- a) Hypotension
- b) Hypertension
- c) Constipation
- d) Sedation
- e) Respiratory stimulation

Ans....الاجابه الصحيحه.

A

Hypotension. Blood pressure should be monitored every 10-15 minutes during the infusion and for up to 90 minutes after the infusion.



[15/8 2:00 AM] 540: د. هاجر على المسماري. All of the following therapies are indicated in hospitalized patients with an acute severe asthma attack except:

- a) Oxygen
- b) Inhaled beta-agonist
- c) Systemic glucocorticoid
- d) Fluids at or slightly below maintenance
- e) Fluids above maintenance

Ans....الاجابه الصحيحه.

E

Fluid above maintenance is a wrong answer because asthma increases ADH secretions.



[15/8 2:00 AM] 541: د. هاجر على المسماري. A severely asthmatic patient is receiving oxygen, inhaled beta-agonist, and systemic glucocorticoid therapies. The child is intubated because of respiratory failure. All of the following therapies are useful in this patient except:

- a) Intravenous beta-agonist
- b) Intravenous theophylline
- c) Heliox
- d) Intramuscular magnesium sulfate
- e) Intravenous magnesium sulfate

Ans....الاجابه الصحيحه.

D

IM magnesium sulfate should not be given.



[15/8 2:00 AM] 542. د. هاجر على المسماري: All of the following therapies are given in patients with acute asthma attacks in the ER except:

- a) Oxygen
- b) Systemic glucocorticoids
- c) Subcutaneous epinephrine may be given
- d) Inhaled beta-agonist
- e) Heliox

Ans....الاجابه الصحيحه

E

Heliox is used in hospitalized patients. Inhaled beta-agonist should be given every 20 minutes for 1 hour, if needed, systemic (oral or IV) glucocorticoid is given. Inhaled ipratropium may be added if the 1st dose response of beta-agonist is inadequate.



543. All of the following measures can reduce the development of asthma except:

- a) Influenza vaccine
- b) Healthy diet
- c) Breast feeding more than 4 months
- d) Active life style
- e) Avoid environmental tobacco smoke beginning prenatally

Ans.....الاجابه الصحيحه

543/ A

Immunizations neither decrease nor increase the development of asthma. All childhood immunizations should be given to all asthmatic children including varicella and annual influenza vaccines. An early life microbial exposures may be associated with reduced allergen sensitization, atopic dermatitis, asthma, and bronchial hyperresponsiveness.



544. All of the following are adverse effects of chronic systemic glucocorticoid therapy except:

- a) Dermal thinning
- b) Cataracts
- c) Glaucoma
- d) Increased skin fragility
- e) Increased IgG levels

Ans,...544/ e

Glucocorticoids decrease IgG levels.



545. The following statements is not true about beta-lactum hypersensitivity reactions:

- a) Patients with late-onset morbilliform rashes with amoxicillin require skin testing before penicillin therapy.
- b) If a patient needs penicillin and has past history of penicillin allergy, skin testing should be performed to determine the presence of penicillin-specific IgE with both the major and minor determinants of penicillin.
- c) If a patient has history of penicillin allergy and needs cephalosporin, skin testing should be performed.
- d) If a patient has history of IgE-mediated reaction to cephalosporin and needs penicillin, skin testing should be performed.
- e) Aztreonam (monobactam) can be used safely in most penicillin-allergic patients.

Ans.....545/ a

Patients with late-onset morbilliform rashes with amoxicillin are not at risk for IgE-mediated reactions to penicillin and do not require skin testing before penicillin therapy. Carbapenems (e.g., imipenem, meropenem) have high degree of cross reactivity with penicillin and are another class of beta-lactam antibiotics. Only aztreonam can be used safely.



[15/8 2:00 AM] 560. د. هاجر على المسماري: All of the following recommendations are useful in prevention of food allergies except:

- a) Avoid seafood until 3 years of age
- b) Avoid egg until 18-24 months of age
- c) Avoid cow's milk until 9 months of age
- d) Promotion of breast feeding with maternal exclusion of nuts
- e) Promotion of breast feeding with maternal exclusion of peanuts

Ans....الاجابه الصحيحه

C

Avoid cow's milk until 1 year of age



[15/8 2:01 AM] 563. د. هاجر على المسماري: All of the following drugs can cause neutropenia except:

- a) Penicillins
- b) Phenothiazines
- c) Sulfonamides
- d) Anticonvulsants
- e) Gentamicin

Ans.....e) Gentamicin

[15/8 2:01 AM] 564. د. هاجر على المسماري: The following finding is not present in patients with Kostmann syndrome:

- a) Monocytosis
- b) Eosinophilia
- c) Neutrophilia
- d) Anemia
- e) Recurrent, severe pyogenic infections

الاجابه الصحيحه

564/ c

Severe congenital neutropenia or Kostman syndrome (or disease)



565. The following finding is not present in patients with Shwachman-Diamond syndrome:

- a) Constipation
- b) Failure to thrive
- c) Delayed puberty
- d) Neutropenia
- e) Metaphyseal chondrodysplasia

Ans....565/ a

Diarrhea usually occurs.



566. The following finding is absent in patients with cartilage-hair hypoplasia:

- a) Short stature
- b) Short limbs
- c) Very fine, thin hair
- d) Neutropenia
- e) Microcytic anemia

Ans.....566/ e

The patients with cartilage-hair hypoplasia appears with macrocytic anemia, hyperextensible fingers, abnormalities of spine, and increased rates of cancer.



567. The most common organism isolated in patients with neutropenia is:

- a) Group A Streptococcus
- b) Staphylococcus epidermidis
- c) Group B Streptococcus
- d) Streptococcus pyogenes
- e) Staphylococcus aureus

Ans....

567/ e

Staphylococcus aureus and gram-negative bacteria are the most common organisms.



[15/8 2:01 AM] 568 د. هاجر على المسماري: Leukoencephalopathy is a clinical syndrome characterized by all of the following except:

- a) Ataxia
- b) Slurred speech
- c) Seizures
- d) Dysphagia
- e) Decorticate posturing

Ans.....الاجابه الصحيحه

E

The patients with leukoencephaly manifest with decerebrate posturing. MRI or head CT scan reveals multifocal areas of white matter degeneration with necrosis. Leukoencephalopathy occurs exclusively in patients who received cranial irradiation or intrathecal chemotherapy.



[15/8 2:01 AM] 82 د. هاجر على المسماري: The most common hypersensitivity reaction of eyes is:

- a) Contact allergy
- b) Atopic keratoconjunctivitis
- c) Giant papillary conjunctivitis
- d) Allergic conjunctivitis
- e) Vernal keratoconjunctivitis

Ans.....الاجابه الصحيحه

D

Allergic conjunctivitis



[15/8 2:01 AM] 211. د. هاجر على المسماري: The most common associated finding in patients with chronic asthma and/or pneumonia is:

- a) Mental retardation
- b) Cerebral palsy
- c) Allergy
- d) Tracheoesophageal fistula (H-type)
- e) Gastroesophageal reflux

Ans.... الاجابه الصحيحه.

E

Gastroesophageal reflux (over 50% of cases)



[15/8 2:01 AM] 926. د. هاجر على المسماري: Common variable immunodeficiency (CVID) can be produced by all of the following drugs except:

- a) Phenytoin
- b) Phenobarbital
- c) Gold
- d) Sulfasalazine
- e) D-penicillamine

Ans..... الاجابه الصحيحه.

B

Phenobarbital does not produce CVID.



[15/8 2:02 AM] 927. د. هاجر على المسماري: Selective IgA deficiency is noted in patients treated with all of the following drugs except:

- a) D-penicillamine
- b) Gold
- c) Phenytoin
- d) Pyrimethamine
- e) Sulfasalazine

Ans....الاجابه الصحيحه

D

Pyremethamine does not produce selective IgA deficiency. Answers (a), (b), (c), and (e) produce selective IgA deficiency and CVID.



[15/8 2:02 AM] د. هاجر على المسماري: child appears with short, pudgy hands, redundant skin, hyperextensible joints of the hands and feet but unable to extend the elbow completely. The child also has fine, sparse, light hair, and eyebrows.

The most likely diagnosis is:

- a) Ataxia-telangiectasia
- b) Omenn syndrome
- c) Cartilage hair hypoplasia
- d) Hyper IgE syndrome
- e) Wiskott-Aldrich syndrome

Ans.....الاجابه الصحيحه

C

Cartilage hair hypoplasia. Patients can develop fatal varicella infections, progressive vaccinia, and vaccine-associated poliomyelitis.



[15/8 2:02 AM] د. هاجر على المسماري: Ataxia telangiectasia mutation (ATM) is mapped on the long arm of chromosome:

- a) X-chromosome
- b) Y-chromosome
- c) Chromosome 7
- d) Chromosome 11
- e) Chromosome 15

Ans.....الاجابه الصحيحه

D

Chromosome 11



[15/8 2:02 AM] 930 د. هاجر على المسماري: All of the following are features of Wiskott-Aldrich syndrome except:

- a) Prolonged bleeding after circumcision
- b) Atopic dermatitis
- c) Recurrent infections
- d) Bloody diarrhea
- e) Initially, thrombocytopenia is due to antiplatelet antibodies.

Ans.... الاجابه الصحيحه

E

Thrombocytopenia is not initially due to antiplatelet antibodies.



[15/8 2:03 AM] 81 د. هاجر على المسماري: All of the following are complications of chronic systemic use of corticosteroids except:

- a) Growth suppression
- b) Hyperglycemia
- c) Delayed sexual maturation
- d) Diabetes mellitus
- e) Hyperkalemia

Ans..... الاجابه الصحيحه

E

Hypokalemia, hyperlipidemia, weight gain, and Cushingoid habitus can occur.



[15/8 2:03 AM] 83 د. هاجر على المسماري: The major causes of death in patients with SLE include all of the following except:

- a) Nephritis
- b) Myocardial infarction
- c) CNS disease

- d) Intestinal bleeding
- e) Infection

Ans....الاجابه الصحيحه

83/ d

Intestinal bleeding does not cause death in patients with SLE. However, pulmonary hemorrhage can cause death in patients with SLE.



84. Myocardial infarction in patients with SLE may be due to:

- a) Coronary artery abnormalities
- b) Endocardial thickening
- c) Pericardiac thickening
- d) Aortic root thickening
- e) Chronic use of corticosteroids

Ans....84/ e

Chronic use of corticosteroids



[15/8 2:03 AM] 85. د. هاجر على المسماري: The most common inflammatory myopathy in pediatric age group is:

- a) Juvenile dermatomyositis
- b) SLE
- c) Scleroderma
- d) Sjogren syndrome
- e) Behcet disease

Ans.....الاجابه الصحيحه

85/ a

Juvenile dermatomyositis



86. A 9-year-old girls appears with fatigue, irritability, low-grade fever, arthralgia, abdominal pain, weight loss, and rash. A physical examination reveals erythema

over the malar areas and bridge of the nose. She also has violaceous (heliotropic) discoloration of the upper eyelids and mild facial edema. All of the following laboratory findings are present in this patient except:

- a) Coombs-positive anemia
- b) Presence of antinuclear antibody
- c) Absence of antibodies to DNA
- d) Negative rheumatoid factor
- e) Elevated serum creatine kinase

Ans.....86/ a

Coombs-negative anemia is present in juvenile dermatomyositis.



[15/8 2:03 AM] 87. د. هاجر على المسماري: All of the clinical manifestations are more frequently present in patients with juvenile dermatomyositis except:

- a) Gottron papules
- b) Heliotrope eyelids
- c) Gower sign
- d) Retinitis
- e) Avascular nailfold capillaries, dropout of capillary end-loops, and terminal bush formation.

Ans....الاجابه الصحيحه

D

Retinitis is a less frequent finding. Gottron papules (skin over the metacarpal and proximal interphalangeal joints are hypertrophic and reddish pink), Gowers sign (a child cannot rise unassisted from the floor without climbing up the body). Mechanic's hands, with thickened skin, skin overgrowth, and range losses are due to refractory, inflammatory myopathy that is more common in adults.



[15/8 2:03 AM] 88. د. هاجر على المسماري: The following laboratory finding is absent in patients with juvenile dermatomyositis:

- a) Elevated ESR (erythrocyte sedimentation rate)
- b) Elevated lactic acid dehydrogenase

- c) Negative antibodies to SSA
- d) Elevated CD4: CD8 ratio
- e) Elevated levels of von Willebrand factor antigen

Ans.....الاجابه الصحيحه

A

ESR is normal. The laboratory findings in patients with juvenile dermatomyositis are the following: elevated serum levels of muscle-derived enzymes (e.g., creatine kinase, aldolase, lactic acid dehydrogenase, serum glutamic-oxaloacetic transaminase); presence of ANA (nonspecific, 60% of cases); negative antibodies to SSA, SSB, Sm, RNP, and DNA; negative rheumatoid factor; elevated percentage of peripheral blood CD19B cells but decreased lymphocyte counts and CD8 cells; presence of Coombs-negative anemia.



[15/8 2:03 AM] 89 د. هاجر على المسماري: The therapy patients with juvenile dermatomyositis includes all of the following except:

- a) Bed rest
- b) Refer to pediatric rheumatologist
- c) Corticosteroids
- d) Intravenous immunoglobulins
- e) Sunscreen

Ans.....الاجابه الصحيحه

A

Bed rest should be avoided because weight bearing improves bone density. A sunscreen (free of para-aminobenzoic acid) provides maximum protection against ultraviolet rays A and B throughout the year.



[15/8 2:04 AM] 547 د. هاجر على المسماري: All of the following are clinical manifestations of subacute phase of Kawasaki disease except:

- a) Periungual desquamation of the fingers and toes
- b) Thrombocytosis

- c) Development of coronary aneurysms
- d) Conjunctival injection
- e) Normal ESR (erythrocyte sedimentation rate)

Ans....الاجابه الصحيحه

E

ESR returns to normal in convalescent phase that is 6-8 weeks after the onset of illness. Anorexia, irritability, and conjunctival injection may persist in subacute phase when there is highest risk of sudden death.



[15/8 2:04 AM] 548 د. هاجر على المسماري: The following laboratory finding is usually not present in patients with Kawasaki disease during the first week of illness:

- a) Thrombocytosis
- b) Elevated ESR
- c) Normal or elevated WBC counts
- d) Normocytic anemia
- e) Elevated neutrophils and bands count

Ans....الاجابه الصحيحه

A

The platelet count is normal in the 1st week of illness, then rapidly increases by 2nd-3rd weeks of illness. Elevated C-reactive protein and other acute phase reactants are noted in acute phase of the disease. Antinuclear antibody and rheumatoid factor are absent. Sterile pyuria, CSF pleocytosis, and mild elevations of hepatic transaminases may be present.



[15/8 2:04 AM] 549 د. هاجر على المسماري: A child is diagnosed to have Kawasaki disease. The 1st echocardiogram is performed on the 5th day of illness when the diagnosis is made. The echocardiogram result is normal. The next step in management is :

- a) No more echocardiogram is needed.
- b) The 2nd echocardiogram should be performed after 2-3 weeks of illness.
- c) The 2nd echocardiogram should be performed after 4-6 weeks of illness.

- d) The 2nd echocardiogram should be performed after 6-8 weeks of illness.
- e) The 2nd echocardiogram should be performed after 1 year of illness.

Ans....الإجابة الصحيحة.

B

First echocardiogram should be performed at the time of diagnosis. If the result is normal, the 2nd echocardiogram should be performed after 2-3 weeks of illness. If both the results are normal, the 3rd echocardiogram should be performed by 6-8 weeks after the onset of illness. If the result is normal, there is no need to repeat the test again.



[15/8 2:04 AM] 550: د. هاجر على المسماري: A child has Kawasaki disease and coronary artery aneurysms. The next step in management is:

- a) Repeat echocardiogram after 1 week
- b) Coronary angiography
- c) Thallium scan
- d) Follow-up chest x-ray daily
- e) Consult with a pediatric cardiologist

Ans....الإجابة الصحيحة.

E

Consult with pediatric cardiologist



[15/8 2:04 AM] 551: د. هاجر على المسماري: A child appears with fever, weight loss, myalgias, arthralgia, chronic sinusitis, hemoptysis, hematuria, and proteinuria.

The most likely diagnosis is:

- a) Tuberculosis
- b) Wegener granulomatosis
- c) DIC
- d) HIV-infection
- e) Churg-Strauss syndrome

Ans....الاجابه الصحيحه

B

Wegener granulomatosis should be suspected in a child with chronic severe sinusitis, pulmonary granulomas, and nephritis.



[15/8 2:04 AM] 931 د. هاجر على المسماري: The frequent major complication in patients with juvenile dermatomyositis is:

- a) Bowel perforation
- b) Partial lipodystrophy
- c) Calcinosis
- d) Aspiration pneumonia
- e) Depression

Ans...الاجابه الصحيحه

931/ d

Aspiration pneumonia occurs due to impairment of swallowing fluids. Answers (a), (b), (c), and (e) are also complications in patients with juvenile dermatomyositis. Progressive bowel infarction can lead to perforation and death.



932. The most common cause of nonthrombocytopenic purpura in children is:

- a) Polyarteritis nodosa
- b) Kawasaki disease
- c) Meningococcemia
- d) Listeria infection
- e) Henoch-Schonlein purpura

Ans.....932/ e

Henoch-Schonlein purpura



933. Hypersensitivity angitis occurs most likely due to:

- a) Sulfonamides
- b) Ampicillin
- c) Pseudomonas infection
- d) Listeria infection
- e) Kawasaki disease

Ans....933/ a

Hypersensitivity angitis is cutaneous vasculitis following exposure to drugs (e.g., sulfonamides). Patients usually appear with fever, myalgias, and arthralgia.



934. A child appears with episodes of intense pain, erythema, and heat in the distal portion of the lower extremities. He noticed that heat exposure triggers clinical manifestations. The most likely diagnosis is:

- a) Erythromelalgia
- b) Reflex sympathetic dystrophy
- c) Allergic reaction
- d) Leukocytoclastic vasculitis
- e) Takayasu arteritis

Ans...934/ a

Erythromelalgia. Treatment includes avoidance of heat exposure and application of cold substance during attacks. Some children may respond to propranolol, carbamazepine, or sodium nitroprusside.



Volume 5.

Dr .fadwa.

[14/8 8:34 PM] Dr Fadwa: 88. The major cat allergen is:

- a) Fe1 d 1
- b) Fe2 d 2
- c) Fe3 d 3
- d) Fe4 d 4
- e) Fe5 d 5

Ans....(A) 

Fe1 d 1 is the major cat allergen that is highly charged protein that readily sticks to walls, carpets, and furnitures

[14/8 8:35 PM] Dr Fadwa: Match all of the following diseases and their impaired functions (114-118):

114. Chronic granulomatous disease

115. Chediak-Higashi syndrome

116. Leukocyte adhesion deficiency 1

117. Familial Mediterranean fever

118. Hyperimmunoglobulin E syndrome

- a) Decreased neutrophil chemotaxis, degranulation, and bactericidal activities
- b) Excessive accumulation of neutrophils at inflamed sites
- c) Impaired IgG opsonization of S.aureus
- d) Decreased binding of C3bi to neutrophils
- e) Failure to activate neutrophil respiratory burst resulting in failure to kill catalase-positive microbes

Ans...114. (E) 

In chronic granulomatous disease, there is failure to activate neutrophil respiratory burst resulting in failure to kill catalase-positive microbes

115. (A) 

In Chediak-Higashi syndrome, there is decreased neutrophil chemotaxis, degranulation, and bactericidal activities

116. (D) 

In leukocyte adhesion deficiency 1, there is decreased binding of C3bi to neutrophils

117. (B) 

In Familial Mediterranean fever, there is excessive accumulation of neutrophils at inflamed sites

118. (C) 

In hyperimmunoglobulin E syndrome, there is impaired IgG opsonization of *Staphylococcus aureus* and impaired chemotaxis at times

[14/8 8:36 PM] Dr Fadwa: 119. All of the following are clinical manifestations in patients with allergic rhinitis except:

- a) An upward rubbing of the nose with an open palm or extended fingers
- b) A continuous open-mouth breathing
- c) A horizontal skinfold over the bridge of the nose
- d) Dark circles under the eyes
- e) Thick, purulent, nasal secretions

Ans.....(E) 

Thick, purulent nasal secretions indicate the presence of an infection. Answer (a) is called the allergic salute. Answer (b) is called the allergic gape. Answer (c) is called the nasal crease. Answer (d) is called the allergic shiners

[14/8 8:37 PM] Dr Fadwa: 120. The triad asthma includes the following conditions:

- a) Asthma, sinusitis with nasal allergy, and acetaminophen sensitivity
- b) Asthma, bronchitis, and aspirin sensitivity
- c) Asthma, bronchiectasis, and ibuprofen sensitivity
- d) Asthma, sinusitis with nasal polyposis, and aspirin sensitivity
- e) Asthma, cystic fibrosis, and penicillin allergy

Ans...(D) 

The triad asthma is characteristically associated with nasal polyposis/hyperplastic sinusitis, and hypersensitivity to aspirin and nonsteroidal anti-inflammatory medications (e.g., ibuprofen)

[14/8 8:38 PM] Dr Fadwa: 121. The preferred study to measure the airflow in patients with asthma is:

- a) Spirometry
- b) Chest X-ray

- c) Chest CT scan
- d) Chest MRI
- e) Peak expiratory flow monitoring

Ans....(A) 

Spirometry is the gold standard to measure airflow in patients with asthma.

Spirometry measures airflow and lung volumes during a forced expiration.

Answer(E) (peak expiratory flow monitoring) is simple, inexpensive, but in some patient, PEF declines only when airflow obstruction is severe. PEF morning-to-evening changes more than 20% is consistent with asthma

[14/8 8:40 PM] Dr Fadwa: 122. The following chromosome is associated with atopic dermatitis:

- a) Chromosome 1
- b) Chromosome 3
- c) Chromosome 5
- d) Chromosome 7
- e) Chromosome 9

Ans...(C) 

Chromosome 5q

[14/8 8:40 PM] Dr Fadwa: Match the following Gell and Coombs classification in different conditions (735-738):

735. Type I (immediate hypersensitivity reactions)

736. Type II (cytotoxic antibody reactions)

737. Type III (immune complex reactions)

738. Type IV (delayed-type hypersensitivity reaction)

- a) Tuberculin test (PPD), allergic contact dermatitis
- b) Serum sickness
- c) Drug-induced hemolytic anemia
- d) Drug or drug metabolic interacts with preformed drug-specific IgE antibodies

Ans....735. (D) 

Type I (immediate hypersensitivity reaction) occurs when a drug or drug metabolites interacts with preformed drug -specific IgE antibodies. These IgE antibodies are bound to the surface of tissue mast cells and/or circulating basophils. They release histamine and leukotrienes resulting in the development of urticaria, broncospasm, or anaphylaxis

736. (C) 

Type II (cytotoxic antibody reactions) involve IgG or IgM antibodies, they recognize drug antigens on the cell membranes. In the presence of complement, these antibody coated cells are either cleared by monocyte-macrophage system or are destroyed (e.g., thrombocytopenia, drug induced hemolytic anemia)

737. (B) 

Type III (immune complex reactions) are due to soluble complexes of drugs or metabolites in slight antigen excess with IgG or IgM antibodies. These immune complexes are deposited in the wall of blood vessels and cause injury by activating the complement cascade (e.g., serum sickness). Patients appear with fever, urticaria, rash, arthralgias, and lymphadenopathies 1-3 weeks after the last dose of the drug and subside when the drug is cleared from the body

738. (A) 

Type IV (delayed hypersensitivity reactions) are mediated by drug -specific T lymphocytes. Sensitization usually occurs via the topical route of administration (e.g., allergic contact dermatitis from topical neosporin and local anesthetics, tuberculin test)

[14/8 8:41 PM] Dr Fadwa: Match the following conditions (741-742):

741. Early phase response of allergic rhinitis

742. Late phase response of allergic rhinitis

- a) IgE mediated
- b) Type IV or T cell mediated

Ans.....741. (A) 

Early phase response of allergic rhinitis is due to IgE mediated

742. (B) 

Late phase response of allergic rhinitis is due to T cell mediated (or type IV Gell and Coombs classification)

[14/8 8:41 PM] Dr Fadwa: 986. A child appears with wheezing, throat infection, postnasal drip, and voice overuse. He was diagnosed with asthma about 6 months ago. He is receiving bronchodilator therapy. He was treated for throat infections on several occasions in the past 6 months. Physicians told the mother that she has an environmental allergy. However, allergic tests and throat cultures were negative. Most likely diagnosis is:

- a) Atypical GERD
- b) Cystic fibrosis
- c) Sinusitis
- d) Virus pharyngitis
- e) Asthma

Ans....(A) 

Atypical (or respiratory extraesophageal) GERD patients have an unexplained or refractory otolaryngologic and respiratory symptoms

[14/8 8:41 PM] Dr Fadwa: 992. Most common associated finding in children with asthma is

- a) GERD
- b) Recurrent pharyngitis
- c) Recurrent tonsillitis
- d) Recurrent sinusitis
- e) Recurrent otitis media

Ans..I.(A) 

GERD is noted in about 50% of asthmatic children

IMMUNOLOGY

Why are human immunodeficiency virus (HIV) antibody tests on neonates born to mothers with HIV not reliable for diagnosing HIV?

Maternal serum antibodies are transferred across the placenta during pregnancy and may be found in the infant until 6 to 12 months of age when the child begins to develop his or her own antibodies. Thus, neonates born to mothers with HIV may have a false-positive HIV antibody test.

What testing should be done on an infant of an HIV-positive mother?

Babies born to HIV-positive women should have a DNA or RNA polymerase chain reaction (PCR) test at 14 to 21 days of life, 1 to 2 months of age, and again at 4 to 6 months of age. Two negative tests are needed to confirm a negative HIV status. Breastfeeding is a source of continued HIV exposure, and is therefore not recommended for HIV-positive mothers in the United States. A baby must have two negative blood tests collected at a minimum of 6 months after cessation of breastfeeding to confirm negative status.

What treatment should be initiated on HIV-exposed infants?

PCP (Pneumocystis jiroveci pneumonia) is a common opportunistic infection encountered in HIV-positive

children. Therefore, it is recommended that HIV-exposed infants are started on prophylactic cotrimoxazole until negative infection status is confirmed.

Patients with a history of recurrent infections with encapsulated organisms such as *Haemophilus influenzae* and *Streptococcus pneumoniae*, along with a failure to respond to antibiotic therapy, suggests what type of immunodeficiency?

This history is strongly suggestive of a primary B-cell deficiency disorder, which includes Bruton agammaglobulinemia, common variable immunodeficiency, and selective IgA deficiency.

A 3-month-old infant has a history of recurrent pneumonia, diarrhea, skin rashes, sepsis, and failure to thrive has an absent thymic shadow on radio-graphic studies. What is the diagnosis?

This patient has severe combined immunodeficiency (SCID) in which a defect in stem cell maturation results in complete absence of lymphocyte function. Patients typically present during infancy with chronic diarrhea, failure to thrive, and opportunistic infections. There are multiple genetic mutations which may cause SCID, all of which cause the absence of functioning T-lymphocytes. Thus, the absent thymic shadow is suggestive of thymic aplasia which can also be seen in other T-lymphocyte disorders such as DiGeorge syndrome.

What precautions are necessary for this patient?

Patients with SCID should never receive blood products without prior irradiation due to the high likelihood of developing a graft versus host reaction. As well, defects in T-lymphocyte function is a contraindication to receiving live virus vaccines.

A 6-month-old infant presents with eczema, recurrent bacterial infections, and thrombocytopenia. What type of immunodeficiency is suspected?

Wiskott-Aldrich syndrome is an X-linked recessive combined (cellular and humoral) immunodeficiency disorder characterized by the triad of eczema, recurrent bacterial infections, and thrombocytopenia.

What is the inheritance pattern of the above syndrome?

This illness results from a defect in the Wiskott-Aldrich syndrome protein (WASP) gene that affects the organization of actin during interactions between antigen-presenting cells and T-cells.

A 4-year-old girl presents to clinic with a history of chronic sinopulmonary infections, regression of motor milestones, and small, dilated vessels along the bulbar conjunctiva and skin surface. An alpha-fetoprotein level is found to be elevated. What condition is this patient at future risk for?

This patient's clinical history is consistent with ataxia telangiectasia, a rare autosomal recessive disorder characterized by humoral and cell-mediated immunodeficiency, oculocutaneous telangiectasia, and progressive cerebellar ataxia due to Purkinje cell degeneration in the cerebellum. This disease is a result of mutations on the ataxia telangiectasia mutated (ATM) gene, which is involved in DNA repair. Therefore, these patients are at increased risk for malignancy, particularly leukemias and lymphomas, as well as radiation sensitivity.

What diagnostic tests would be needed to diagnose disorders of cell-mediated immunity?

An absolute lymphocyte count (ALC), T-cell panel, mitogen stimulation response, and delayed hypersensitivity skin testing are often used to diagnose cell-mediated immunity disorders.

A 4-month-old infant presents with a hypocalcemic tetany, ventricular septal defect, abnormal facies, and thymic hypoplasia. What is the etiology of this patient's condition?

This patient has DiGeorge syndrome, which results from the abnormal development of the third and fourth pharyngeal pouches. It is characterized by the mnemonic CATCH-22: Cardiac abnormalities, Abnormal facies, Thymic hypoplasia, Cleft palate, Hypocalcemia, chromosome 22q11 deletion. There is a strong overlap between this syndrome and velocardiofacial syndrome.

Why do patients with the above condition have disorders of cell-mediated immunity?

Patients with DiGeorge syndrome have varying degrees to thymic hypoplasia, and thus differing degrees of T-lymphocytes function. The thymus is a primary lymphoid organ for the development of T-lymphocytes. Those with complete DiGeorge syndrome have thymic aplasia and therefore no functioning T-lymphocytes. Others have mild thymic hypoplasia and are classified as partial DiGeorge.

The concerned parents of the infant in the previous question want to know the treatment options for their child. What do you tell them?

Thymus transplantation and human leukocyte antigens (HLA)-identical bone marrow transplants have been successful in patients with complete DiGeorge syndrome. Some patients with partial DiGeorge have improved in time without treatment. However, initial therapy should be directed toward treating hypocalcemia and repairing associated congenital heart defects and cleft palate.

A 5-year-old girl has a history of multiple respiratory, gastrointestinal, and urinary tract bacterial infections. Serum IgA is less than 5 mg/dL. What diagnosis is suspected?

Selective IgA deficiency is the most common primary immunodeficiency syndrome and is most often asymptomatic. It is found in approximately 1 out of every 600 people.

What medical treatments are contraindicated in the above condition?

Characterized by low levels or absence of serum and secretory IgA immunoglobulin, selective IgA deficiency patients may have fatal anaphylactic reactions to blood products and intravenous immunoglobulin. Thus, immunoglobulin treatment is contraindicated in these patients.

A 10-month-old infant presents with a condition in which he has recurrent sinopulmonary infections, no tonsillar tissue, and extremely low or absent levels of immunoglobulins and mature B-lymphocytes. What is the name and cause of his disorder?

X-linked agammaglobulinemia (XLA), also known as Bruton agammaglobulinemia, is an X-linked recessive disorder in which a defect in the gene coding for Bruton tyrosine kinase causes arrest of early B-cell development.

Symptoms occur after 6 to 9 months when maternally derived antibody levels fall.

A 9-year-old boy with a history of liver abscesses and chronic pyogenic skin infections is found to have leukocytosis and hypergammaglobulinemia. What are the next steps needed to make the diagnosis?

This patient likely has chronic granulomatous disease (CGD) in which phagocyte dysfunction leads to an inability to kill catalase-positive micro-organisms. A nitroblue tetrazolium test (NBT) will be negative as neutrophils in this patient are unable to reduce NBT to insoluble blue formazan. A dihydrorhodamine (DHR) test is used to confirm the diagnosis. This test uses flow cytometry to show lack of superoxide production.

What is the treatment for the above patient?

Treatment for CGD includes prophylactic trimethoprim-sulfamethoxazole and itraconazole, antibiotic treatment during infections, and recombinant interferon-gamma, which reduces the incidence of serious infections. Human stem cell transplant is the only known cure for CGD.

A 22-month-old child presents with a history of recurrent sinusitis, pneumonia, and impetigo. Physical examination is significant for oculocutaneous albinism and laboratories are significant for pancytopenia. What treatment should be offered to the patient?

This patient has Chediak-Higashi syndrome, an autosomal recessive disorder characterized by abnormal intracellular protein transport which affects neutrophil function. Treatment includes antibiotics for acute infections, high-dose ascorbic acid, and bone marrow transplant.

A 2-month-old female infant presents with labial cellulitis and an intact umbilical stump. Blood testing reveals a very high WBC count. What condition should you suspect?

Although very rare, this patient could have leukocyte adhesion deficiency, in which a defect on chromosome 21 causes a failure in CD18 expression. CD18 is essential for leukocyte adhesion to vascular endothelium and phagocytosis. Clinical manifestations include delayed umbilical cord separation, recurrent bacterial and fungal infections, absence of pus at wound sites, and persistent leukocytosis.

Patients with complement disorders are at higher risk of what three conditions?

Disorders of the complement system can manifest in increased susceptibility to *Neisseria* infection, hereditary angioedema, and a higher incidence of autoimmune disease.

What tests are performed to establish the diagnosis of complement disorders?

Total hemolytic complement tests of the classical or terminal pathway and alternative pathways known as CH50 and AH50, respectively, are used to establish the diagnosis of complement disorders. Further testing may be necessary to identify the causative protein involved.

An 18-month-old boy status post bone marrow transplantation for SCID presents 3 weeks post-op with severe diarrhea and intense, widespread reddening of the skin with exfoliation. Laboratories are significant for elevated

liver function tests (LFTs). What is the etiology of this patient's condition?

Graft-versus-host disease (GVHD) is a complication of bone marrow transplantation. It is characterized by grafted and immunocompetent donor T-cell activation against an immunocompromised host's major histocompatibility complex antigens (HCA).

What could have been done to prevent the above condition and what treatment can be offered to the patient?

GVHD may be prevented by a careful preoperative screening for blood group (ABO) and HLA-compatible donors. The treatment for GVHD includes the use of high doses of corticosteroids, antibodies to T-cells, or other immunosuppressive medications.

ALLERGY

One hour after a CT scan with iodinated contrast, a 19-year-old patient becomes short of breath, tachypneic, tachycardic, and has a BP of 80 per palp. The patient's friend tells you that she thinks there is a history of an allergic reaction to shellfish. What is the next clinical step?

The patient has anaphylaxis secondary to the administration of iodinated radioactive contrast. The next clinical step is to establish ABCs (airway, breathing, circulation). IM epinephrine should be given simultaneously as well as diphenhydramine. Vital signs should be monitored frequently.

What is the difference between anaphylaxis and anaphylactoid reaction?

Although anaphylactoid reaction is clinically similar to anaphylaxis, anaphylactoid reaction is not IgE-mediated and does not require previous exposure to the antigen.

What are the causes of acute urticaria?

Urticaria, or hives, is caused by a type I hypersensitivity reaction or other immunologic response. Etiologies include viruses, bacteria, food, medications, insect stings, autoimmune diseases, and malignancies. The most common cause of acute urticaria in children is viruses.

What is the difference between acute and chronic urticaria?

Chronic urticaria is defined as symptoms that last for more than 6 weeks. Many cases are autoimmune and are associated with autoantibodies directed against the high-affinity IgE receptor on mast cells and basophils. Food and aeroallergen testing is not recommended in cases of chronic urticaria.

A 7-year-old girl presents with a long history of nasal congestion, sneezing, and profuse watery rhinorrhea. On physical examination, the nasal mucosa are blue and boggy, there are dark circles under the eyes, and a horizontal crease across the middle of the nose. What is the next clinical step and what is the treatment?

This patient has allergic rhinitis, a type I hypersensitivity reaction to environmental allergens. Skin testing may be needed to determine the causative allergen(s). Allergen avoidance, nasal steroids, and non-sedating H1 histamine blockers are first-line treatments. If a particular allergen

is the culprit, immunotherapy (allergy shots) would be a second-line treatment.

What is the atopic triad?

Allergic rhinitis, asthma, and atopic dermatitis make up the atopic triad.

A 13-year-old adolescent girl presents with a rash on her arms and legs that appeared 3 days following a camping trip in the woods. The rash is red, linear, with raised small vesicles filled with clear fluid. She reports that it is extremely itchy. What are the most common exposures that could cause this type of reaction?

This patient has contact dermatitis, which is a T-cell mediated, type IV hypersensitivity reaction. The most common exposures are to plants in the Toxicodendron genus which include poison ivy, poison sumac, and poison oak. The allergen urushiol is found in the sap of these plants. It is also cross-reactive with allergens found in mango, ginkgo, cashew, and pistachio trees.

تم بحمد الله في 18/8/2018

الشكر لكل الزملاء الذين عاونوني على اخراج هذا الكتاب التجميعي . جزاهم الله كل خير . ولا تنسوننا من صالح دعائكم . تم اخراج هذا الكتاب في قروب Arab board part1 oct.2018

د. محمد عكاشة