

## Primary Care Rotations Program: Post Test

### INSECT ALLERGY

1. Which statement is most appropriate for individuals with history of anaphylaxis to Wasp stings and positive skin test to insect venom?
  - A) Immunotherapy with venom should be considered for 3-5 years
  - B) Immunotherapy with whole body extract should be given indefinitely
  - C) These individuals should avoid being outdoors
  - D) Insect repellants containing DEET should help prevent future stings
2. A 16 year old white male was stung on the dorsum of his left hand which became very painful. The swelling extended to cover the whole dorsum of the hand and halfway up the forearm within 4 hours of the sting. There was no evidence of compromised circulation or neurological injury. Which of the following is the **BEST** treatment option?
  - A) H-1 blocker antihistamines and epinephrine
  - B) Epinephrine and systemic steroids
  - C) H-1 blocker antihistamines and consider oral steroids
  - D) Immunotherapy with venom from the same species of insect after the reaction subsides
3. After the successful treatment of a severe anaphylactic reaction to a venom sting in the emergency room, the **BEST** follow-up advice would be:
  - A) See your primary care physician the next day and call back if problems
  - B) Fill a prescription for injectable epinephrine and see an allergist for possible immunotherapy with the insect venom
  - C) Stay indoors more in warm weather months and use insect repellant when outdoors
  - D) Take H-1 blocker antihistamines when outdoors and keep epinephrine on hand for emergencies

### URTICARIA QUESTIONS

4. A 32 year old white female presents to you with a history of recurrent episodes of swelling of the face, extremities, and abdomen with occasional abdominal pain and vomiting. Episodes have come and gone for most of her adult life, but became worse recently when she started on birth control pills. Her father has a history of swelling as well. Which of the following tests would **MOST LIKELY** give a correct diagnosis?
  - A) Allergy prick skin tests for food allergy
  - B) Skin testing for estrogen and progesterone
  - C) Serum C4 and C1 esterase inhibitor levels
  - D) 24 hour urine for porphyrin levels
5. Which statement concerning chronic urticaria is **MOST** accurate?
  - A) It is most often caused by food or drug allergy

- B) 40% or more of patients may have auto-antibodies to receptors on mast cells
  - C) Most patients will turn out to have serious underlying health problems
  - D) This problem is often familial or hereditary
6. Which type of vasculitis is **MOST** likely to cause an urticarial rash?
- A) Granulomatous vasculitis
  - B) Polyarteritis nodosa
  - C) Leukocytoclastic vasculitis
  - D) Temporal arteritis
7. A 50 year old female comes to your office with complaints of welts, itching, bloating and nausea sometimes to the point of vomiting after her morning workout. She intermittently has sneezing, rhinorrhea, and nasal congestion. On further questioning, you learn that the “welts” are very small, transient lesions often near the waist band, and that she eats the same breakfast she has always eaten before going to the gym. Your differential diagnosis includes which of the following:
- A) aquagenic urticaria
  - B) delayed pressure urticaria
  - C) cholinergic urticaria
  - D) insect infestation in the gym
  - E) latex allergy

## **FOOD ALLERGY**

8. A 14 year old male who has been jogging regularly this summer in preparation for the cross-country season presents to your office with a complaint of episodes of urticaria and chest tightness while running. The **LEAST** appropriate initial management approach would be to:
- A) Have the patient use albuterol and an antihistamine before running
  - B) Question the patient about a history of food allergies or food reactions, timing and content of meals before the reactions
  - C) Question the patient about the specific symptoms, timing, amount of exercise, location and response to therapy and prescribe Epi to have on hand when running
  - D) Advise the patient to limit physical activity to levels that have not been associated with a reaction and to never exercise alone
9. A 4 year old boy had an anaphylactic reaction to a cookie at age 2 years but no tests were performed. The patient was advised to avoid peanuts. At this point the RAST test to peanut is negative. The **BEST** next step would be:
- A) Add peanut to the diet with the assumption that the patient was probably not ever allergic to peanut, test for other allergies such as nuts
  - B) Perform an oral food challenge in your office under the supervision of a physician
  - C) Repeat the peanut-specific IgE level
  - D) Refer to an allergist for skin testing and appropriate counseling

10. A 6 year old presents to the office with a history of recurrent episodes of throat edema and facial urticaria shortly after eating breakfast. His mother isn't sure of the foods that he ate each time, but he usually eats Honey-Nut Cheerios™ with bananas and milk, but sometimes he has a granola bar. His specific IgE testing (RAST) shows positive reactions to milk, peanuts and oats.  
The **BEST** next step would be:
- A) Review his dietary history with mother, specifically what foods he has eaten since the last reaction, and which of the suspect foods he has eaten without a reaction
  - B) Have the patient avoid all the positive foods and prescribe Epi to keep on hand
  - C) Perform an oral challenge in your office under physician supervision for each of the skin test (+) foods
  - D) Both A and B are correct
11. A 5 year old presents to the office with a history of diffuse urticaria and shortness of breath at 18 months of age after tasting a peanut butter sandwich. Now mother wants to know what to do.  
The **BEST** approach is:
- A) Advise the mother that people never outgrow peanut allergy
  - B) Perform an oral challenge to peanut in your office
  - C) Order a RAST to peanut. If negative, arrange for skin testing.
  - D) Skin test the patient to peanut

### **ATOPIC DERMATITIS AND ALLERGIC CONTACT DERMATITIS**

12. Which one of these is not considered a **MAJOR** criteria in the diagnosis of Atopic Dermatitis?
- A) Pruritus
  - B) Chronic or chronically relapsing dermatitis
  - C) Personal or family history of atopy
  - D) Eosinophilia
  - E) Typical morphology and distribution
13. Which one of these immuno-regulatory abnormalities is commonly **NOT** observed in patients with Atopic Dermatitis?
- A) Increased IgE
  - B) Impaired delayed hypersensitivity
  - C) Increased function of IL-4 and IL-5
  - D) Increased eosinophil histamine release
  - E) Increased secretion of gamma interferon
14. Which one of the following statements is **NOT** true in patients with Atopic Dermatitis (AD)?
- A) Up to 80% of patients who develop AD show manifestations of the disease by 5 years of age.
  - B) Positive skin prick testing (SPT) or Elevated Specific IgE has greater than 70% positive predictive value in establishing a diagnosis of clinical food allergy.

- C) Deficiency in antimicrobial peptides might predispose these patients to develop infections caused by bacteria, fungi and virus.
- D) Patients with intrinsic and extrinsic AD have been shown to make specific IgE against staphylococcal aureus toxins.
- E) Smallpox vaccination is contraindicated in patients with past history of AD unless there is imminent danger of exposure to smallpox.
15. Successful management of Atopic Dermatitis commonly requires a systematic, multi-pronged approach including all of the following **EXCEPT**:
- A) Skin hydration
  - B) Anti-pruritic therapy
  - C) Allergen immunotherapy
  - D) Identification and possible elimination of exacerbating factors
  - E) Topical anti-inflammatory medications
16. Common agents which cause Allergic Contact Dermatitis (ACD) include all of the following **EXCEPT**:
- A) Rhus (poison ivy, poison oak, poison sumac)
  - B) Nickel products
  - C) Rubber products (mercaptobenzothiazole, thiuram)
  - D) Household detergents
  - E) Hair dye products (paraphenylenediamine)

## **ANAPHYLAXIS**

17. What is the median age for the onset of peanut allergy?
- A) Less than 2 years of age
  - B) 2-4 years of age
  - C) 5-10 years of age
  - D) 10-20 years of age
18. How often is more than one dose of epinephrine **MOST** likely required for an episode of anaphylaxis?
- A) 1-10%
  - B) 20-35%
  - C) 50-75%
  - D) Greater than 75%
19. A 7 year old white male is brought to your office because he is distractable and having difficulty with school.
- Which of the following additional history would **NOT** suggest consideration of allergy/immunology referral?
- A) For the past 1.5 years he has had increased difficulty with nasal congestion, snoring, and intermittent difficulty hearing in spring and fall. Symptoms are worse at the beginning and end of the school year. He gets good grades in winter.
  - B) He is up coughing at night several times a week and also in gym class.

- C) He does not relate well to people, including family members, and his mother suspects food allergy. He has trouble with constipation.
- D) He seems uncomfortable after eating the school lunch. He regularly has diarrheal stool twice in the afternoon on school days.
20. Which of the following scenarios illustrates an antigen/antibody complex reaction?
- A) Cough, shortness of breath, hives, cramping abdominal pain and diarrhea after ingestion of walnuts and almonds.
- B) Postnasal drip, rhinorrhea, and cough after drinking beer.
- C) Fever, arthralgias, rash, and adenopathy after penicillin treatment for strep throat
- D) Pruritic skin rash after working in the woods.
21. Which of the following scenarios illustrates a cytotoxic reaction?
- A) Afebrile, recurrent pneumonia in December in a Christmas tree farmer. Eos and fungal hyphae are found on BAL and cultures are negative for bacterial pathogens.
- B) Anemia and leukopenia in a 6 year old who has had 3 courses of cephalosporin in the past 4 months for severe, impetiginized eczema.
- C) Target lesions, urticaria and angioedema, lip and ankle swelling in a 4 year old treated with Suprax for otitis.
- D) Urticaria and angioedema after shellfish ingestion.
22. A 14 year old male complains of recurrent abdominal pain since last summer, causing him to miss over 20 days of school so far this year. He has not had diarrhea or fever and his physical exam at this time is normal. Family history is positive for allergic rhinitis but negative for food allergy and bowel disease. Carafate and Tums have not alleviated these symptoms. If endoscopy (without biopsy) is normal and CBC with diff, complete metabolic profile, and WESR are also normal, which of the following diagnoses could be the **CORRECT** explanation for his symptoms?
- A) Food allergy
- B) Eosinophilic gastroenteritis
- C) Childhood migraine
- D) Inflammatory bowel disease.

## **ASTHMA AND ALLERGIC RHINITIS**

23. Reasonable recommendations for a patient with moderate persistent asthma poorly controlled on low dose inhaled corticosteroids include all the following **EXCEPT**:
- A) Add a long-acting bronchodilator inhaler BID
- B) Double the dose of inhaled corticosteroid
- C) Add a leukotriene modifier
- D) Add nebulized cromolyn BID
24. Which of the following tests would be **MOST** helpful in diagnosing asthma?

- A) Frequency dependence of compliance
  - B) Pre and post bronchodilator FEV<sub>1</sub>
  - C) Arterial blood gases
  - D) Exhaled nitrous oxide (instead of pulse oximetry)
  - E) Diffusing capacity.
25. Which of the following statements is **INCORRECT** regarding inhaled corticosteroids?
- A) Can be useful in patients who have persistent asthma
  - B) Can be useful in patients who require rescue inhaler 1-2 times per week
  - C) Can be used in 6-12 year old children with asthma
  - D) Acutely increase peak flow rate, a measure of large airway function
  - E) Reduce airway hyper-reactivity.
26. A 10 year old girl has had asthma for 18 months. She typically complains of asthma symptoms 3 times per week on the average. She has never been hospitalized for asthma but has had 2 ED visits for wheezing with upper respiratory tract infections in the past 6 months. She complains of cough and shortness of breath with strenuous exercise. Her FEV<sub>1</sub> and PEF<sub>R</sub> are both >75% of predicted. Her treatment to date has been an albuterol inhaler prn. At this point, all of the following are acceptable treatment approaches **EXCEPT**:
- A) Start a leukotriene antagonist daily, albuterol inhaler prn and before exercise.
  - B) Start an inhaled corticosteroid at moderate dose, continue albuterol prn and before exercise
  - C) Start the patient on an inhaled steroid and leukotriene antagonist, and albuterol inhaler before exercise and prn.
  - D) Start the patient on a combined controller inhaler with inhaled steroid and long acting bronchodilator.
27. A 7 year old boy has been followed by your office for 2 years with asthma that is generally controlled with prn albuterol and regular low dose inhaled corticosteroids. Over the last few months, he has been experiencing more frequent asthma symptoms, with some wheezing, cough or shortness of breathe at least daily. He often has to come in from playing to rest. His PEF<sub>R</sub> is 70% of his personal best peak flow. Your recommended treatment for this patient could include any of the following **EXCEPT**:
- A) Increase to a medium dose of inhaled corticosteroid
  - B) Add a long-acting inhaled bronchodilator to a low dose of inhaled corticosteroid
  - C) Increase the inhaled corticosteroid to a medium dose and add a long-acting inhaled bronchodilator.
  - D) Discontinue inhaled steroid and add a long-acting inhaled bronchodilator and leukotriene receptor antagonist.
28. Which of the following immune deficiencies is associated with recurrent Neisserial infections:

- A) C6 Deficiency
- B) Hereditary Angioedema
- C) Mannose Binding Protein Deficiency
- D) Paroxysmal Nocturnal Hemoglobinuria

29. A 40 year old woman who works as a waitress comes in to your office with increased shortness of breath. She is known to have inhalant allergies for which she is on medication; she takes Advair 500/50 2x/day for her asthma; and she smokes ½ to 1 pack per day for the past 22 years, but none for the past week. She has been using albuterol 4-5 times a day for the past 10 days with only minimal clinical improvement. The best way to distinguish COPD from asthma in this patient is:

- A) Post bronchodilator's FEV-1 reversibility of >13%
- B) Increased residual volume
- C) Decreased DL-CO
- D) Improvement with prednisone treatment

30. An 11 year old boy had asthma diagnosed at 2 years of age, allergies diagnosed at 6 years of age with elevated IgE of 648 and specific sensitivities by skin testing to dust mite and mold. His recurrent sinusitis is so severe that the ENT specialist wants to do sinus surgery, even though he has not yet entered puberty. Which one of the following is **LEAST** likely to be the cause of the severe and recurrent sinusitis?

- A) Cystic fibrosis
- B) Primary ciliary dyskensia
- C) Alpha-1-antitrypsin deficiency
- D) Undiagnosed common variable immunodeficiency

## IMMUNOLOGY

31. A patient presents with recurrent infections, thinning hair, pointed incisor teeth and abnormalities of sweating. Which of the following immune disorders is **MOST** likely in this patient?

- A) X-linked Proliferative Syndrome
- B) IPEX (Immune dysregulation, polyendocrinopathy, enteropathy, X-linked syndrome)
- C) X-linked Agammaglobulinemia
- D) Hypohydrotic Ectodermal Dysplasia with Immune Deficiency

32. Which of the following symptom(s) is **NOT** known to be a complication from allergic rhinitis?

- A) Recurrent pain over the sinuses
- B) Intermittent popping of her ears with difficulty hearing
- C) Frequent sore throat; morning fatigue despite 8 hours of sleep
- D) Expiratory wheezes while at work in the animal lab
- E) Central sternal chest pain.

33. A 30 year old biology graduate student was treated for allergic rhinitis and asthma with antihistamine,

nasal steroids, inhaled corticosteroids, leukotriene receptor antagonist and hyposensitization with improvement and without adverse side effects. When she becomes pregnant 18 months later, you advise her to:

- A) Stop hyposensitization injections, inhaled steroids, and leukotriene antagonist. Continue fenofexadine and fluticasone nasal spray.
- B) Stop hyposensitization, continue loratadine with decongestant, leukotriene receptor antagonist, nasal steroid and inhaled steroid.
- C) Decrease dose of hyposensitization by 50%, replace fenofexadine with loratadine, stop inhaled steroid and nasal steroid.
- D) Continue hyposensitization at current dose, replace fenofexadine with cetirizine, stop nasal steroid and inhaled steroid.
- E) Continue hyposensitization, replace fenofexadine with cetirizine, continue leukotriene receptor antagonist, continue nasal and inhaled corticosteroid.

## **PEDIATRIC IMMUNOLOGY**

34. For which of the following organisms do patients with X-linked agammaglobulinemia have an increased susceptibility?
- A) *Candida* spp.
  - B) ECHO virus
  - C) Herpes simplex
  - D) Atypical *Mycobacterium*
  - E) *Aspergillus fumigatus*
35. What is the most likely cause of chronic diarrhea in a patient with selective IgA deficiency?
- A) *Pseudomonas cepacia*
  - B) *Candida albicans*
  - C) Enteropathic *Escherichia coli*
  - D) ECHO virus
  - E) *Giardia lamblia*
36. You see a 6 year old boy accompanied by his mother in a routine follow-up visit. You learn that both mother and son have had increased difficulty with their allergies. The boy has had a cough since the neighborhood flooded 2 months ago. The water was 2 feet deep in their partially finished basement, but has since receded completely. The most likely allergen(s) causing his symptoms is/are:
- A) Dust mite
  - B) Pollutants
  - C) Mold
  - D) Cat and dog dander
37. Adequate remediation for the water damage to the basement consists of:
- A) Removal of any carpet and stuffed furniture

- B) Removal of the linoleum tile on the concrete floor
- C) Opening the basement window and exhausting the air with a large fan until the basement is completely dry
- D) Checking for any damage to the water heater or the furnace which are located in the basement
- E) Removal of any drywall that became wet, as well as any carpet, stuffed furniture, etc.
- F) All of the above