

A/I Self-Assessment - Knowledge and Practice Gaps  
2015

Topic	Question text	Answer's text	Avg % Correct	Knowledge Gap Suggested:	Practice Gap Suggested:
Allergens and Testing	Intradermal skin testing is most appropriate for which antigen?	Cashew Cat Aspergillus Grass	46.50%	Significant knowledge gap in understanding of antigen characteristics	Knowledge gap impacts daily practice. Better understanding of antigen characteristics needed
	Per the American Thoracic Society Guidelines, which is a contraindication to methacholine challenge testing?	FEV1 of 65% predicted Myocardial infarction 6 months ago Systolic blood pressure of 160 mm Hg Aortic aneurysm	17%	Review guidelines for bronchoprovocation testing	Most practices and even some centers do not routinely perform bronchoprovocation testing.
	Most fungal allergy is a result of sensitization to	hyphal fragments. mycotoxin. asexual spores. sexual spores.	36.50%	Review knowledge of fungal allergies	questionable practice importance?
	The mechanism underlying bronchoprovocation using methacholine most closely resembles the mechanism underlying a bronchial challenge test to	histamine. exercise. mannitol. adenosine.	45.50%	Direct versus indirect bronchoprovocation testing	Of interest to those performing these procedures in their practice or offices, again most do not.
	Which animal-derived allergen is enzymatically active?	Fel d 1 Mus m 1 Can f 1 Der p 1	46%	Review knowledge of perennial allergen determinants	Impacts preparation of allergen extracts
Anaphylaxis/Insect Allergy	According to current anaphylaxis practice parameters, after epinephrine, which is the next recommended treatment sequence?	Oxygen, patient position, intravenous fluids Oxygen, intravenous fluids, patient position Patient position, oxygen, intravenous fluids Patient position, intravenous fluids, oxygen	57.50%	Review of Anaphylaxis Treatment algorithms	Defined protocols in local practice environments that match current practice parameter guidelines
	The most common cause of peri-operative anaphylaxis is which of the following:	Hydroxyethyl Starch Intravenous Antibiotics Neuromuscular blocking agents Propofol	47.50%	Review of common reactions to classes of medications	very rare consultation, defer to others.
	Which of the following agents is the best initial therapy for treatment of bradycardia in a patient with anaphylaxis and beta-blockade?	Atropine Dopamine Glucagon Norepinephrine	28.50%	Review of Anaphylaxis Treatment algorithms	Defined protocols in local practice environments that match current practice parameter guidelines
	A 17-year-old developed generalized hives 6 years ago, after being stung by a flying insect. Skin test to yellow jacket was positive at that time. What is the current risk of systemic reaction if stung again?	2% 10% 25% 50%	30.50%	Review Stinging Insect Practice Parameter guidelines for risk and testing	Match PP guidelines for testing and risk assessment to clinical practice
Asthma	In children with mild to moderate persistent asthma, which characteristic predicts a more favorable FEV1 response to inhaled corticosteroid compared to a leukotriene antagonist?	Bronchodilator use > 4 puffs/week Methacholine PC20 > 16 mg/mL Pre-bronchodilator FEV1/FVC > 80% Serum IgE < 30 IU/mL	49%	guideline criteria for mild/moderate asthma	how to access guidelines via websites to review criteria.
	Which of the following histologic characteristics best distinguishes asthma from chronic obstructive pulmonary disease?	Increased epithelial desquamation Increased airway mucus			

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		Increased bronchial smooth muscle Thickened reticular basement membrane	34%	Pathology of asthma	all are characteristic, bad question.
	What is the most effective method to determine effectiveness of omalizumab?	FEV1 Methacholine challenge Serum IgE Symptom scores	55%	methods of measuring Asthma	Omalizumab effectiveness
Dermatitis	Which of the following genes is most closely linked with skin barrier dysfunction in atopic dermatitis?	WASP SPINK5 ADAM33 GRPA	45%	genetics of atopic dermatitis	none, irrelevant due to no effect on therapy
	When compared to the cytokine profile of acute atopic dermatitis lesions, chronic atopic dermatitis is associated with	increased IL4. increased IL5. increased IL13. decreased IFN $\gamma$ .	27%	cytokine soup knowledge	may affect therapy in future with monoclonals.
Drug Reactions	The earliest time at which most aspirin desensitized AERD patients who discontinue aspirin will return to sensitivity is	12 hours. 1 day. 2 days. 7 days.	56%	Mechanism and duration of aspirin desensitization	Duration of desensitization effect after aspirin desensitization
	In drug-induced toxic epidermal necrolysis, which of the following cells has increased expression of Fas-ligand?	Endothelial cell Keratinocyte Langerhans cell T-regulatory cell	53%	Pathophysiology of drug induced TEN	unlikely practice scenario except academic, no therapeutic importance.
	DRESS syndrome is defined as a drug-induced rash with eosinophilia and systemic symptoms characterized by	Dependent palpable purpura. Diffuse urticarial rash. Erythroderma with facial edema. Tense bullae.	53%	Typical clinical presentation of DRESS	Typical clinical presentation of DRESS
Food Allergy	A 3-year-old male with rhinitis has specific IgE to foods that he has never ingested in the past. Which of the following foods has the lowest level of specific IgE that will be predictive of a positive food challenge?	Peanut Soy Egg Fish	40%	Knowledge of food specific IgE levels predictive of a positive food challenge	Use of food specific IgE testing in the prediction of food challenge outcomes
	Which intervention is most effective in a child with eosinophilic esophagitis?	Topical budesonide Specific food elimination diet Elemental diet Proton pump inhibitor	47%	Effectiveness of various medical treatments for eosinophilic esophagitis	Management of eosinophilic esophagitis with medical therapies
	Ingestion of which of the following foods is likely to cause systemic contact dermatitis in patients sensitized to balsam of Peru?	Anise Cinnamon Mint Spearmint	58%	Foods that contain contact dermatitis allergens	The evaluation of contact dermatitis allergens in food allergy skin reactions
	Long term persistence of IgE mediated cow's milk allergy is characterized by specific IgE binding to	conformational epitopes. linear epitopes. neoantigenic epitopes. epitopes with high binding affinity.	48%	Immunologic mechanism for long term persistence of food specific IgE	This fact is not typically used to inform clinical practice - maybe it suggests that clinicians may not realize the mechanism of long term food allergy?
	Food protein-induced allergic proctocolitis typically presents	in breast-fed infants who have blood mixed with mucus in their stool. with specific IgE to milk or soy. with systemic symptoms such as vomiting, diarrhea, and growth failure.	46%		

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		with mucosal infiltration by mixed eosinophilic and lymphocytic cell populations.		Immunologic mechanism of food protein-induced allergic proctocolitis	The evaluation and management of non-IgE mediated food allergy reactions
Immunodeficiency	A 4 month-old girl presenting with pneumonia and diarrhea is found to have JAK 3 deficiency. Which cell surface marker would you expect to find in normal numbers on peripheral blood flow cytometry?	CD4 CD8 CD20 CD56	28.50%	Role of JAK3 in cytokine signalling.	Diagnostic approach in an infant with suspected SCID & interpretation of flow cytometry/lymphocyte subset analysis
	The presence of bony abnormalities in a child with a SCID phenotype suggests a mutation in the gene encoding	adenosine deaminase. Artemis. common gamma chain. RAG-1.	46%	Clinical features associated with selected forms of SCID	Identify common skeletal abnormalities in patients with ADA SCID
	The most effective step in the removal of potential prion contamination of IGIV is:	cold ethanol fractionation solvent detergent treatment pH4 and trypsin caprylate precipitation with cloth filtration	23.50%	Processing steps used in IGIV preparation	curiosity only, we hope whatever process works
	An infant with severe combined immunodeficiency in a bone marrow transplant unit received an unfractionated HLA-identical bone marrow transplantation. Twenty days post transplantation the patient develops a morbilliform maculopapular rash, severe diarrhea and an unremitting fever. On examination, there is mild hepatosplenomegaly. What is the next most appropriate diagnostic study?	peripheral blood lymphocyte phenotyping skin biopsy with histologic analysis hepatitis serology studies stool culture	42%	Recognize clinical features of acute graft-versus-host disease following BMT	Evaluation of possible acute GVHD with associated skin rash
	A deficiency in STAT 1 results in increased susceptibility to	meningococcal meningitis. Herpes encephalitis. invasive pneumococcal disease. staphylococcal osteomyelitis.	42%	Recognize clinical features of STAT1 deficiency	Infectious disease board question
	Which characteristic differentiates autoimmune lymphoproliferative syndrome (ALPS) from common variable immune deficiency (CVID)?	Lymphadenopathy Elevated serum IL-10 Increased TCR gamma-delta CD4-CD8- Spleno megaly	20%	Diagnostic criteria and laboratory findings in ALPS	Diagnostic work-up for suspected ALPS
	A previously healthy four year old child presents with a 4 week history of fever and generalized lymphadenopathy. Lymph node biopsy reveals ill-defined areas of macrophages filled with acid fast bacilli which upon culture prove to be Mycobacterium avium complex. Lymphocyte phenotyping and testing for HIV are normal/negative. Which test is most likely to reveal a primary immunodeficiency?	flow cytometry for interferon gamma receptor 1 (IFN $\gamma$ R1) expression flow cytometry for MHC class I expression total hemolytic complement (CH50) T cell mitogen responses	57%	Clinical features of patients with Mendelian susceptibility to mycobacterial disease (MSMD) and inherited disorders of IFN- $\gamma$ R1	Diagnostic work-up for suspected Mendelian susceptibility to mycobacterial disease (MSMD)

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	Leukocyte adhesion deficiency II is characterized by which of the following?	Severe mental retardation Neutropenia Hypogammaglobulinemia X-linked inheritance	32.50%	Clinical features of leukocyte adhesion deficiency (LAD) type II	academic puzzle, goggle use
	Granulomatous lymphocytic lung disease is a complication of which immunodeficiency disease?	pediatric HIV common variable immunodeficiency X-linked hyper-IgM syndrome hyper-IgE syndrome	49%	Pulmonary disease associated with common variable immunodeficiency	Diagnostic work-up of patients with primary immune deficiency and associated lung disease
Other Lung Conditions	<p>A 60 year-old farmer has an 8-year history of cough with slowly progressive dyspnea. Spirometry shows FEV1 to be 60% of predicted with an FEV1/FVC of 0.78 and 20% reversibility of FEF25-75 following bronchodilator. The chest radiograph is shown. What is the most likely causal antigen?</p><p></p>	Mycopolyspora faeni Cryptostroma corticale Aspergillus clavatus Thermoactinomyces sacchari	11.50%	How to google farmer's lung	occupational asthma take good history of occupational exposures.
	A worker in a plant that makes epoxy resins develops dyspnea and cough. A likely cause of this condition is	anhydrides. Aspergillus species. colophony. plicatic acid.	52.50%	How to google occupational lung diseases	occupational asthma take good history of occupational exposures.
	According to the Global Initiative for Chronic Obstructive Lung Disease (GOLD), what is the most appropriate therapy for a patient with COPD with an oxygen saturation of 95% on room air and spirometry results of FEV1/FVC 65% and FEV1 55% predicted?	Supplemental daily oxygen Inhaled corticosteroid Inhaled corticosteroid and long acting bronchodilator Long acting bronchodilator	23.50%	Review of GOLD guidelines	use spirometry in office/
	A 70-year-old man with persistent cough, asthma, and sputum production has a CT scan with central bronchiectasis. What is the most likely diagnosis?	COPD Recurrrent bronchitis ABPA Churg-Strauss Syndrome	59.50%	Common findings in ABPA(Google them)	Common masquaraders of asthma
	Occupational asthma occurring in which workers has the longest latency period?	Janitors using ammonia cleaner Seafood processors Automobile body spray painters Hairdressers	26%	google occupational lung diseases	occupational asthma take good history of occupational exposures.
	Which of the following suggests the diagnosis of hypersensitivity pneumonitis?	antigen-specific IgG antigen-specific IgE peripheral eosinophilia sputum eosinophilia	53.50%	laboratory confirmation of HP	labs useful for occupational lung diseases
Pharmaceuticals for Allergy	In addition to antibiotics, proven adjunct treatment for acute sinusitis includes	topical corticosteroids. oral decongestants. saline irrigation. mucolytics.	45.50%	pharma driven studies	Management of acute sinusitis

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	Compared to guideline-based management, asthma therapy based upon sputum eosinophils has resulted in which of the following?	<p>Reduced exacerbations</p> <p>Reduced osteoporosis</p> <p>Increased oral candidiasis</p> <p>Increased ICS use</p>	47%	Role of using sputum eosinophils in asthma management	guidelines review, how many practices routinely do sputums?
	Which inhaled corticosteroid has the highest oral bioavailability?	<p>Budesonide</p> <p>Beclomethasone</p> <p>Fluticasone</p> <p>Ciclesonide</p>	48.50%	Oral bioavailability of different inhaled corticosteroid formulations	all considered safe and effective by FDD, pharma driven question
	Please select the group of drugs that both antagonize the effect of histamine and prevent the degranulation of mast cells.	<p>Epinastine, azelastine, olopatadine, ketotifen</p> <p>Epinastine, azelastine, olopatadine, ketorolac</p> <p>Epinastine, azelastine, olopatadine, nedocromil</p> <p>Cromolyn, ketotifen, azelastine, olopatadine</p>	40.50%	Recognition of specific drugs that antagonize histamine and prevent mast cell degranulation	Is that a fact?
	The administration of omalizumab produces which one of the following?	<p>Decrease in total IgE measured by commercial assay</p> <p>Prevention of histamine release from basophils by calcium ionophore</p> <p>Increase in low affinity IgE receptors on mast cells</p> <p>Decrease in high affinity IgE receptors on basophils</p>	58.50%	Understanding mechanism of action of omalizumab	questionable practice importance?
	Which therapy is most likely to benefit older adult patients whose asthma is uncontrolled by inhaled corticosteroids (ICS) alone?	<p>Double ICS dose</p> <p>Add theophylline</p> <p>Add tiotropium</p> <p>Add montelukast</p>	57.50%	Is it asthma or COPD or does it really matter?	Pharmaceutical management of asthma in older adult patients
	Which is a mechanism of glucocorticoid resistance?	<p>Decreased activation of mitogen-activated protein</p> <p>Increased activation of transcription factor activator protein 1</p> <p>Increased histone deactelylase-2 expression</p> <p>Decreased macrophage migration inhibitory factor</p>	45%	Understanding mechanism of action of glucocorticoid resistance	board question trivia
Rhinitis/Sinusitis	Four days following functional endoscopic sinus surgery, a patient develops increased rhinorrhea. Which of the following assays on the nasal fluid most likely would be diagnostic?	<p>Tryptase</p> <p>Lysozyme</p> <p>Myeloperoxidase</p> <p>Beta-2 transferrin</p>	53.50%	components of cerebral spinal fluid	testing for glucose or other sign of CSF leak
	Which of the following is most commonly found in cultures taken from patients with allergic fungal sinusitis?	<p>Aspergillus</p> <p>Bipolaris</p> <p>Candida</p> <p>Cryptococcus</p>	29.50%	fungal causes of sinusitis	irrelevant to practice curiosity
	The best therapeutic outcomes following specific allergen immunotherapy correlate with:	<p>increased allergen-specific-IgE levels seasonally</p> <p>decreased sensitivity of allergen induced basophil histamine release</p> <p>increased allergen-specific IgG2 antibodies</p>			

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	early and transient increase in allergen-specific IL-10 expression in PBMC	23%	mechanism of action of immunotherapy	research tool lab	
An 11 year old boy with seasonal asthma and contact lenses presents in the spring with worsening eye symptoms of pruritus, tearing and photophobia. What is the most likely diagnosis?	allergic conjunctivitis atopic keratoconjunctivitis giant papillary conjunctivitis vernal keratoconjunctivitis	34.50%	differential of red eye	therapy different for the various conditions	
A 4 year-old male attending day care develops a temperature of 39°C, periorbital swelling and purulent nasal discharge. The most appropriate antibiotic choice (he has no history of adverse drug reactions) is	amoxicillin. amoxicillin-clavulanate. erythromycin. doxycycline.	54.50%	viral vs. bacterial infections	most likely bacterial causes of acute sinusitis	
One month after an episode of acute otitis media, a previously healthy 3-yr-old patient returns with bilateral otitis media with effusion. The most appropriate management is:	an antihistamine/decongestant a penicillinase-resistant antibiotic bilateral tympanostomy tubes watchful waiting for 3 months	41.50%	Practice telling the mother this	latest guidelines for otitis media	
Urticaria/Angioedema	Which antibody is most commonly associated with chronic autoimmune urticaria?	IgG anti-IgE IgE anti-FcεR1α IgG anti-FcεR1α IgE anti-FcεR1α	54%	Gap in knowledge about autoantibodies	therapy importance? We all know what hives look like?
	A 27 year old female with hereditary angioedema presents for advice on prophylaxis. She is recently married and is trying to become pregnant. You recommend:	oral danazol subcutaneous kallikrein inhibitor intravenous C1 inhibitor epsilon-aminocaproic acid	55.50%	knowledge of the virilizing affects of danazol	Allergists might choose the wrong medication for use in pregnancy
	Approximately what percentage of patients receiving angiotensin converting enzyme inhibitors are likely to get angioedema?	0.5% 5% 10% 15%	42.50%	knowledge of the frequency of ACE I side effects	differential of angioedema
In chronic nonvasculitic, idiopathic urticaria, skin biopsy typically reveals a perivascular infiltrate consisting primarily of	monocytes. eosinophils. lymphocytes. neutrophils.	47.50%	pathophysiology of CHRONIC IDIOPATHIC URTICARIA	biopsy in office setting	
Which treatment for HAE is associated with a black box warning for anaphylaxis?	Aminocaproic acid Human C1 esterase inhibitor Ecallantide Icatibant	47%	Side effect profile of HAE treatments	pharma driven question	
A 55 year old male presents with non-pruritic angioedema of the hands and lips. The spleen is palpable and he has 50% lymphocytes in his peripheral smear. In addition to a low C4 level, the complement profile most consistent with this acute episode is	A				

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<p>In the treatment of chronic urticaria, the most likely potential advantage of doxepin therapy compared to hydroxyzine therapy is</p>	<p>a longer half-life</p> <p>less subsensitivity of the H1 receptor.</p> <p>reduced sedation.</p> <p><b>increased H2 inhibition.</b></p>		<p>33%</p> <p>doxepin is a combined H1 H2 antagonist</p>	<p>underuse of Doxepin</p>																