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Medical Knowledge Self-Assessment Program

MKSAP 16: Errata and Revisions

(Updated September 2013)

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Cardiovascular Medicine

[Page 31](#): In Heart Failure, Diagnosis and Evaluation of Heart Failure, Clinical Evaluation, the credit line for Table 13 (Clinical Signs of Heart Failure) should read as follows: Adapted from Journal of Cardiac Failure. 16(6). Heart Failure Society of America. Lindenfeld J, Albert NM, Boehmer JP, et al. HFSA 2010 Comprehensive Heart Failure Practice Guideline. e1-e194. Copyright 2010, with permission from Elsevier. [PMID: 20610207]. Sensitivity and specificity data from Wang CS, FitzGerald JM, Schulzer M, Mak E, Ayas NT. Does this dyspneic patient in the emergency department have congestive heart failure? JAMA. 2005;294(15):1944-56. [PMID: 16234501]. (Added January 2013)

[Page 70](#), left column, first paragraph: In the last sentence, the phrase "because a compensatory increase in heart rate is expected" should be deleted. The sentence should read: "Rate response in atrial fibrillation should be controlled with conventional medications, but bradycardia should be avoided." (Added January 2013)

[Page 89](#), right column, bottom of the page: In the first sentence of the last paragraph, "CMR imaging" should be "MRI." (Added January 2013)



[Page 123](#), Item 12: This question has been invalidated as a result of postpublication analysis and/or new data that are relevant to the question. Please select answer C to earn a point for this item and ensure completion of all items in this self-assessment examination, which is necessary for CME/MOC submission. Although the published correct answer C, start eplerenone, is the most appropriate choice among the options listed, it may not be the best first treatment option for the patient described in this item. Although the efficacy of eplerenone is substantiated by the results of the EPHEUS trial cited in the critique, the educational objective of the question was to emphasize the benefit of aldosterone antagonist therapy in specific patients with heart failure or other comorbidities. Eplerenone's benefits as supported by the study may be offset by this agent's high cost; spironolactone is an acceptable alternative that could have been used initially in this patient before another aldosterone antagonist such as eplerenone was tried.

In addition, a Cardiovascular Medicine committee member disclosed a relationship with the manufacturer of the agent eplerenone (Pfizer) as part of MKSAP's conflict of interest disclosure policy. After further postpublication review of MKSAP, the Editors determined that, although the question is technically correct as written, invalidation of item 12 was necessary in our efforts to provide evidence-based medical education without the appearance of bias that models appropriate care and is in alignment with ACP's emphasis on high-value care. **(Added September 2013)**

[Page 211](#), Item 114: The last sentence of the first paragraph of the critique should read: "In a normal study without an intracardiac shunt, the bubbles produced in an agitated saline contrast study dissipate in the pulmonary microcirculation and do not opacify the left ventricle." **(Added April 2013)**

Dermatology

[Page 9](#), Figure 13: The figure legend should be changed to read: "Atopic dermatitis of the popliteal fossa demonstrating characteristic erosions, crusting, and lichenification; the antecubital fossa may also be involved." **(Added April 2013)**

[Page 13](#): In Pityriasis Rosea, the following should be added after the third sentence: "Trailing scale refers to an area of scaling that follows an advancing border or rash, usually associated with annular lesions such as pityriasis or erythema annulare centrifugum." **(Added April 2013)**



[Page 25](#): In the second paragraph of the Cellulitis and Erysipelas section, the first sentence should read: "In contrast to cellulitis which involves the deeper layers of the skin (lower dermis, subcutaneous fat, and other structures), erysipelas refers to an infection of the upper dermis and superficial lymphatics." Similarly, the second key point on that page should also be changed. **(Added September 2013)**

[Page 38](#), Figure 72: The figure legend should be changed to read: "Acral melanomas are found on the palms, soles, and on subungual surfaces typically presenting as black or dark brown irregularly pigmented macules or patches." **(Added April 2013)**

[Pages 45-46](#): The fourth sentence in Autoimmune Bullous Diseases should read: "Several autoimmune *bullous* diseases can be associated with systemic disease, including malignancy, and their presence may necessitate further medical evaluation." **(Added April 2013)**

[Page 60](#), The fourth bullet in Diabetes Mellitus: "Scleroderma" should be "Scleredema." **(Added April 2013)**

[Page 66](#): In Androgenetic Alopecia, the following sentences should be added at the end of the paragraph: "Finasteride is contraindicated (FDA category X) in pregnant women because it is known to cause birth defects in the male fetus. Women who are or may potentially be pregnant should not take finasteride and should avoid contact with crushed or broken tablets because it can be absorbed through the skin." **(Added April 2013)**

[Page 69](#): In Onychomycosis, delete the reference to Figure 116 and insert the following: "However, onychomycosis may be difficult to differentiate from other nail disorders such as onycholysis and onychodystrophy that may be seen with systemic diseases (Figure 116)." **(Added April 2013)**

[Page 69](#), Figure 116. The figure legend should be changed to read: "This patient with psoriatic arthritis has onycholysis and onychodystrophy and is clinically difficult to distinguish from onychomycosis caused by a fungal infection. Before treatment of onychomycosis is instituted, it is important to confirm the diagnosis by potassium hydroxide (KOH) examination of the nail, a fungal culture, or by histologic examination of the nail clippings." **(Added April 2013)**

[Page 104](#), Item 72: Option C should read "Treat with high-potency topical corticosteroid." **(Added April 2013)**

Endocrinology and Metabolism

[Page 11](#): In Inpatient Management of Hyperglycemia and Diabetes, the last sentence of the first paragraph should be changed from "For these reasons, measurement of plasma glucose and hemoglobin A_{1c} levels should be routine when most adults are admitted" to "For these reasons, hospital admission provides a good opportunity to screen for the presence of diabetes through measurement of plasma glucose and hemoglobin A_{1c} levels. However, the benefits of this screening are likely greatest in patients with specific risk factors. For example, the United States Preventive Services Task Force (USPSTF) concludes that screening for diabetes in adults with sustained blood pressure greater than 135/80 mm Hg has benefit but that no clear evidence of benefit exists when blood pressures are 135/80 mm Hg or less. Similarly, the ADA, on the basis of expert opinion, recommends consideration of screening patients for impaired fasting glucose, impaired glucose tolerance, or diabetes in persons age 45 years or older, particularly those with a body mass index of 25 or greater; this organization also states that diabetes screening should be considered in persons younger than 45 years who are overweight if they have another risk factor for diabetes, including inactivity, family history of type 2 diabetes, membership in a high-risk ethnic group, gestational diabetes, hypertension, dyslipidemia, impaired fasting glucose, impaired glucose tolerance, or a history of vascular disease." **(Added April 2013)**

[Page 11](#): In the first sentence, fourth paragraph, and first Key Point of Inpatient Management of Hyperglycemia and Diabetes, the recommended plasma glucose range for critically ill hospitalized patients with hyperglycemia should be changed, according to American College of Physicians guidelines, from 140 to 180 mg/dL (7.8-10.0 mmol/L) to 140 to 200 mg/dL (7.8-11.1 mmol/L). Similarly, the second sentence of the same paragraph about the consensus statement by the American Diabetes Association and the American Association of Clinical Endocrinologists (that recommends maintaining fasting and premeal glucose levels of less than 140 mg/dL [7.8 mmol/L] but no lower than 90 mg/dL [5.0 mmol/L] and random or postprandial levels of less than 180 mg/dL [10.0 mmol/L] in noncritically ill hospitalized patients) should have been followed by the statement: "However, the American College of Physicians recommends not using intensive insulin therapy to strictly control blood glucose levels in noncritically ill hospitalized patients with or without diabetes mellitus, noting that avoiding targets less than 140 mg/dL (7.8 mmol/L) should be a priority because harms are likely to increase at lower blood glucose targets." The second Key Point at the end of this section should also have been followed by this clarification. **(Added April 2013)**



[Page 11](#): The last sentence of the last paragraph of the Inpatient Management of Hyperglycemia and Diabetes section should read: "For patients who are more critically ill or whose blood glucose level cannot be maintained in target range with subcutaneous insulin, an intravenous insulin (not glucose) infusion, which allows much more rapid adjustments, should be considered..." **(Added September 2013)**

[Page 36](#): In Structural Disorders of the Thyroid Gland, Thyroid Nodules, the first sentence of the third full paragraph in the right-hand column should be replaced with the following: "Patients with nodules greater than 4 cm who have associated worrisome historical findings (such as a history of external radiation to the neck), clinical findings (such as abnormal cervical lymphadenopathy or hoarseness), or radiologic features (see Table 20) but benign results of FNA biopsy can be considered for thyroidectomy." **(Added April 2013)**

[Page 41](#): In the third sentence of the first paragraph of Description, Causes, and Diagnosis of Adrenal Insufficiency, the word "diminished" should precede the abbreviation "ACTH" ("In contrast, central adrenal insufficiency is caused either by diminished ACTH secretion...") **(Added April 2013)**

Gastroenterology and Hepatology

[Page 38](#), fourth sentence under Health Care Maintenance for the Patient with Inflammatory Bowel Disease should read: "Immunosuppressed patients should receive influenza vaccination every year and pneumococcal vaccination as recommended by the Advisory Committee on Immunization Practices (ACIP)."

In October 2012, the Advisory Committee on Immunization Practices (ACIP) updated recommendations for pneumococcal vaccination in patients with immunocompromising conditions, anatomic or functional asplenia, cerebrospinal fluid (CSF) leaks, or cochlear implants. Immunocompromising conditions are defined as follows: congenital or acquired immunodeficiency, HIV infection, chronic kidney disease, the nephrotic syndrome, leukemia, lymphoma, Hodgkin disease, generalized malignancy, iatrogenic immunosuppression (such as long-term corticosteroid therapy), solid organ transplant, and multiple myeloma. For adults ≥ 19 years of age with an immunocompromising condition, functional asplenia, a CSF leak, or cochlear implants who have never received any pneumococcal vaccination, an initial dose of 13-valent pneumococcal conjugate vaccine (PCV-13) should be given, followed by a first dose of 23-valent pneumococcal polysaccharide vaccine (PPSV-23) at least 8 weeks later. A single, second dose of PPSV-23 should be given 5 years after the first PPSV-23 vaccination in those with anatomic or functional asplenia or with an immunocompromising condition. For adults ≥ 19 years of age with immunocompromising conditions, anatomic or functional asplenia, CSF leaks, or cochlear implants who have previously received at least one dose of PPSV-23, a single PCV-13 dose should be given ≥ 1 year after their last PPSV-23 immunization. All patients who have ever received a PPSV-23 vaccination should receive another dose of PPSV-23 at age 65 years, or later if at least 5 years have elapsed since their last PPSV-23 dose. **(Added April 2013)**

[Page 69](#), third sentence under Immunizations should read: "Pneumococcal vaccination should be given according to the recommendations of the Advisory Committee on Immunization Practices (ACIP) for immunosuppressed patients, and tetanus toxoid should be given every 10 years." See [new information](#) above clarifying the use of pneumococcal vaccination in patients with immunocompromising conditions. **(Added April 2013)**

[Page 117](#), Item 15: In the first paragraph of the critique, the second-to-last sentence should read: "Thus, predominant heartburn or regurgitation symptoms should be categorized as GERD rather than dyspepsia." **(Added January 2013)**

[Page 123](#), Item 30, second paragraph of critique, third sentence: See [new information](#) above clarifying the use of pneumococcal vaccination in patients with immunocompromising conditions. **(Added April 2013)**

General Internal Medicine

[Page 14](#), Pneumococcal Disease (text and Table 8): The following new information clarifies the use of pneumococcal vaccination in patients with immunocompromising conditions.

In October 2012, the Advisory Committee on Immunization Practices (ACIP) updated recommendations for pneumococcal vaccination in patients with immunocompromising conditions, anatomic or functional asplenia, cerebrospinal fluid (CSF) leaks, or cochlear implants. Immunocompromising conditions are defined as follows: congenital or acquired immunodeficiency, HIV infection, chronic kidney disease, the nephrotic syndrome, leukemia, lymphoma, Hodgkin disease, generalized malignancy, iatrogenic immunosuppression (such as long-term corticosteroid therapy), solid organ transplant, and multiple myeloma. For adults ≥ 19 years of age with an immunocompromising condition, functional asplenia, a CSF leak, or cochlear implants who have never received any pneumococcal vaccination, an initial dose of 13-valent pneumococcal conjugate vaccine (PCV-13) should be given, followed by a first dose of 23-valent pneumococcal polysaccharide vaccine (PPSV-23) at least 8 weeks later. A single, second dose of PPSV-23 should be given 5 years after the first PPSV-23 vaccination in those with anatomic or functional asplenia or with an immunocompromising condition. For adults ≥ 19 years of age with immunocompromising conditions, anatomic or functional asplenia, CSF leaks, or cochlear implants who have previously received at least one dose of PPSV-23, a single PCV-13 dose should be given ≥ 1 year after their last PPSV-23 immunization. All patients who have ever received a PPSV-23 vaccination should receive another dose of PPSV-23 at age 65 years, or later if at least 5 years have elapsed since their last PPSV-23 dose. **(Added April 2013)**

[Page 47](#), top of first column: The last sentence of the section "Diagnostic Evaluation of Syncope" should be deleted, and replaced with new text.

The sentence that is deleted is as follows: "Tilt-table testing should be reserved for patients with suspected neurocardiogenic syncope not confirmed by history and physical examination, for those with recurrent syncopal episodes, and for patients suspected of having arrhythmogenic syncope or who have a high risk profile for cardiovascular events in whom previous testing has not been revealing."

The new text that is inserted is as follows: "Tilt-table testing should be reserved for patients with recurrent episodes of syncope in the absence of known heart disease or in patients with documented heart disease in whom a cardiac cause has been excluded. Tilt-table testing may also have a role in evaluating patients in whom documenting neurocardiogenic syncope is important (such as in high-risk occupational settings), and differentiating the cause of syncope from neurologic (such as seizure) or psychiatric etiologies." **(Added April 2013)**

[Page 65](#), first column, sixth line of text: The following sentence should be inserted after the sentence ending "... with multiple medications": "However, because warfarin is also metabolized by CYP2C9, both fluvastatin and rosuvastatin have been associated with increases in the INR in warfarin-treated patients; concurrent use of either of these medications with warfarin should be avoided or monitored closely." **(Added April 2013)**

[Page 86](#): In Intrauterine Devices, in the last sentence of the paragraph, "within 7 days" should be changed to "within 5 days." **(Added April 2013)**

[Page 89](#), first column, Nonhormonal Therapy: The following sentence should be added after the 2nd sentence of the paragraph: "Different antidepressant agents appear to have variable efficacy for this use: Venlafaxine, desvenlafaxine, and paroxetine have been demonstrated to be effective in some women; in contrast, few

studies have shown efficacy with fluoxetine, sertraline, or citalopram." (**Added April 2013**)

[Page 143](#), Item 2: In the first sentence, "left hand" should be "right hand." (**Added January 2013**)

[Page 144](#), Item 7: This question has been invalidated as a result of postpublication analysis and/or new data that are relevant to the question. Please select answer D to earn a point for this item and ensure completion of all items in this self-assessment examination, which is necessary for CME/MOC submission.

Because the patient was not specifically noted to have had an erythrocyte sedimentation rate (ESR) performed as part of her prior laboratory studies, and obtaining an ESR is reasonable to assess for the presence of an active inflammatory process as the cause of chronic fatigue, this option would be potentially correct. (**Added April 2013**)



[Page 153](#), Item 47: The lead-in question should be changed from "Which of the following should be recommended before surgery?" to "Which of the following interventions is most likely to reduce this patient's risk of perioperative pulmonary complications?" (**Added September 2013**)

[Page 159](#), Item 74: See [new information](#) above clarifying the use of pneumococcal vaccination in patients with immunocompromising conditions. (**Added April 2013**)

[Page 175](#), Item 148: At the end of the first paragraph of the stem, the sentence "Her only medication is tiotropium" should be changed to "She is on no medications." (**Added April 2013**)

Hematology and Oncology

[Page 17](#), fourth paragraph in Waldenström Macroglobulinemia: The first sentence should be changed from "Diagnosis requires demonstration of lymphoplasmacytic lymphoma comprising 10% or more of the bone marrow cellularity and the presence of an IgM M protein" to "Diagnosis requires demonstration of lymphoplasmacytic lymphoma (*a neoplastic infiltrate consisting of lymphocytes, plasmacytoid lymphocytes, plasma cells, and immunoblasts*) comprising 10% or more of the bone marrow cellularity and the presence of an IgM M protein." (**Added January 2013**)

[Page 28](#), The first sentence of the first full paragraph should read: "The deletion of three α genes ($--/-\alpha$) leads to hemoglobin H (β_4) disease, which may be associated with severe anemia and clinical sequelae, including heart failure and hypoxia, and is identifiable on hemoglobin electrophoresis." (**Added January 2013**)



[Page 35](#), the third sentence in first paragraph in Other Causes of Hemolysis should read: "Babesiosis may also lead to severe hemolytic anemia in patients with previous splenectomy or functional asplenia and should be suspected in patients with hemolysis after recent travel to high-incidence areas, such as states in the northeast United States (including Nantucket Island and Cape Cod), and the upper midwestern states." (**Added September 2013**)

[Page 72](#), right-hand column, the third full paragraph, first sentence AND [page 219, Item 142](#), fifth sentence of critique should read: "Postmenopausal women with hormone receptor–positive breast cancer should take a 5-year course of an aromatase inhibitor as primary treatment or for an additional 5 years after completing a 5-year course of tamoxifen therapy. In women who are initially treated with tamoxifen, an aromatase inhibitor

may be started following 2 to 3 years of tamoxifen therapy to complete a total of 5 years of hormonal therapy." (**Added January 2013**)

[Page 160](#), Item 3: In the sentence "Although fresh frozen plasma (FFP) is the main blood component containing anti-IgA antibodies, erythrocytes and platelet products also contain...", the words "containing anti-IgA antibodies..." should read "containing IgA...." (**Added April 2013**)

[Page 171](#), Item 28: The second sentence of critique should read: "This patient has cobalamin deficiency as evidenced by elevations in homocysteine and methylmalonic acid, with a typical peripheral blood smear." (**Added January 2013**)

[Page 186](#), Item 62: The first sentence of third paragraph should read: "Furosemide may be helpful in those patients who are *hypervolemic*, but there is no clinical evidence to support this diagnosis in this patient." (**Added January 2013**)

[Page 208](#), Item 114: The correct answer is **B**, not **C** as printed. (**Added January 2013**)



[Page 212](#), Item 124: In the last sentence of the first paragraph of the critique, cefepime is a *fourth*-generation, not a third-generation, cephalosporin. (**Added September 2013**)

Infectious Disease

[Page 7](#): In the left-hand column, third paragraph, the sentence "For abscesses in the early cerebritis stage (that is, the earliest stage of purulent brain infection when there is little or no enhancement on neuroimaging) or when all the abscesses are smaller than 2.5 cm, the largest lesion should be aspirated for diagnosis and microbiologic identification" should be replaced with the following sentences: "Diagnosis is more challenging in the early cerebritis stage (that is, the earliest stage of purulent brain infection when there is little or no enhancement on neuroimaging). If multiple focal lesions develop measuring less than 2.5 cm in an area of suspected infection, the largest lesion present should be aspirated for diagnosis and microbiological identification." (**Added April 2013**)

[Page 56](#): In the first paragraph, the sentence "Conjugate vaccines are preferred to polysaccharide vaccines in these patients" should be deleted. The following new information clarifies the use of pneumococcal vaccination in patients with immunocompromising conditions.

In October 2012, the Advisory Committee on Immunization Practices (ACIP) updated recommendations for pneumococcal vaccination in patients with immunocompromising conditions, anatomic or functional asplenia, cerebrospinal fluid (CSF) leaks, or cochlear implants. Immunocompromising conditions are defined as follows: congenital or acquired immunodeficiency, HIV infection, chronic kidney disease, the nephrotic syndrome, leukemia, lymphoma, Hodgkin disease, generalized malignancy, iatrogenic immunosuppression (such as long-term corticosteroid therapy), solid organ transplant, and multiple myeloma. For adults ≥ 19 years of age with an immunocompromising condition, functional asplenia, a CSF leak, or cochlear implants who have never received any pneumococcal vaccination, an initial dose of 13-valent pneumococcal conjugate vaccine (PCV-13) should be given, followed by a first dose of 23-valent pneumococcal polysaccharide vaccine (PPSV-23) at least 8 weeks later. A single, second dose of PPSV-23 should be given 5 years after the first PPSV-23 vaccination in those with anatomic or functional asplenia or with an immunocompromising

condition. For adults ≥ 19 years of age with immunocompromising conditions, anatomic or functional asplenia, CSF leaks, or cochlear implants who have previously received at least one dose of PPSV-23, a single PCV-13 dose should be given ≥ 1 year after their last PPSV-23 immunization. All patients who have ever received a PPSV-23 vaccination should receive another dose of PPSV-23 at age 65 years, or later if at least 5 years have elapsed since their last PPSV-23 dose. **(Added April 2013)**

[Page 81](#): After the last sentence of the Treatment section, the following sentence defining antibiotic lock therapy was added: "Antibiotic lock therapy involves the instillation of a highly concentrated antibiotic solution into an intravenous catheter to facilitate sterilization in order to treat a catheter-related blood stream infection." **(Added April 2013)**

[Page 88](#): In the first paragraph under Immunizations and Prophylaxis for Opportunistic Infections, the word "polysaccharide" should be deleted. See [new information](#) above clarifying the use of pneumococcal vaccination in patients with immunocompromising conditions. **(Added April 2013)**

[Page 124](#), Item 53: The sentence "A radiograph of the left foot reveals soft tissue swelling with erosion of the cortex at the head of the metatarsal bone beneath the site of the ulceration" was changed to "A radiograph of the left foot indicates no subcutaneous gas or foreign bodies." **(Added April 2013)**

[Page 132](#), Item 86: The first sentence of the question should read: "A 25-year-old woman undergoes follow-up evaluation of an episode of anaphylaxis that occurred 3 weeks ago following a transfusion of packed red blood cells after trauma resulting from a motor vehicle collision." **(Added January 2013)**

[Page 134](#), Item 97: This question has been invalidated as a result of postpublication analysis and/or new data that are relevant to the question. Specifically, both options (A) avoidance of tap water and (E) prophylactic rifaximin could be construed as correct. As stated in the critique, although the avoidance of tap water has been shown to confer only a mild benefit, this practice continues to be recommended for travelers by the Centers for Disease Control and Prevention. Therefore, this could be considered a correct option. Please select answer E to earn a point for this item and ensure completion of all items in this self-assessment examination, which is necessary for CME/MOC submission. **(Added April 2013)**


[Page 180](#), Item 92. The last sentence of the first paragraph of the critique should be changed to "This emphasizes the need for diligent administration of pneumococcal vaccines in solid organ transplant patients who are by definition considered to have an immunocompromising condition." See [new information](#) above clarifying the use of pneumococcal vaccination in patients with immunocompromising conditions. **(Added April 2013)**

[Page 186](#), Item 106: The second paragraph of the critique of item 106 was changed to the following: "Although continuous antibiotic prophylaxis is a treatment option, in women with recurrent urinary tract infections temporally related to sexual intercourse, postcoital prophylaxis is generally the preferred approach because of patient convenience, a decreased overall exposure to antibiotics, and a lower risk of development of antimicrobial resistance." **(Added April 2013)**

Nephrology

[Page 4](#), Table 3: In the Comments column of the Leukocytes row, the original text "Lower levels can be abnormal" has been replaced with "The presence of any leukocytes may be abnormal depending on clinical

circumstances." (**Added April 2013**)

 **Page 6**, Table 6: In the "Total Protein" row, the normal value for 24-hour excretion is <200 mg/24 h, and the value for albuminuria or clinical proteinuria is ≥200 mg/24 h. (**Added September 2013**)


Page 17, Hyponatremia: The second sentence of the first paragraph states "Therapy is then directed toward correcting the hyponatremia based on estimating the water deficit..." This sentence should read "Therapy is then directed toward correcting the hyponatremia based on estimating the water deficit..." (**Added January 2013**)

Page 70, Pigment Nephropathy: In the fourth paragraph of this section, the callout for Figure 18 has been deleted. (**Added April 2013**)

Page 90, Special Considerations, Vaccination: In the second paragraph of this section, the phrase "and at 5-year intervals" has been deleted. The following new information clarifies the use of pneumococcal vaccination in patients with immunocompromising conditions.

In October 2012, the Advisory Committee on Immunization Practices (ACIP) updated recommendations for pneumococcal vaccination in patients with immunocompromising conditions, anatomic or functional asplenia, cerebrospinal fluid (CSF) leaks, or cochlear implants. Immunocompromising conditions are defined as follows: congenital or acquired immunodeficiency, HIV infection, chronic kidney disease, the nephrotic syndrome, leukemia, lymphoma, Hodgkin disease, generalized malignancy, iatrogenic immunosuppression (such as long-term corticosteroid therapy), solid organ transplant, and multiple myeloma. For adults ≥19 years of age with an immunocompromising condition, functional asplenia, a CSF leak, or cochlear implants who have never received any pneumococcal vaccination, an initial dose of 13-valent pneumococcal conjugate vaccine (PCV-13) should be given, followed by a first dose of 23-valent pneumococcal polysaccharide vaccine (PPSV-23) at least 8 weeks later. A single, second dose of PPSV-23 should be given 5 years after the first PPSV-23 vaccination in those with anatomic or functional asplenia or with an immunocompromising condition. For adults ≥19 years of age with immunocompromising conditions, anatomic or functional asplenia, CSF leaks, or cochlear implants who have previously received at least one dose of PPSV-23, a single PCV-13 dose should be given ≥1 year after their last PPSV-23 immunization. All patients who have ever received a PPSV-23 vaccination should receive another dose of PPSV-23 at age 65 years, or later if at least 5 years have elapsed since their last PPSV-23 dose. (**Added April 2013**)

Page 93, Special Considerations in Transplant Recipients, Vaccinations: In the second sentence of this section, "every 5 years" has been deleted. See [new information](#) above clarifying the use of pneumococcal vaccination in patients with immunocompromising conditions. (**Added April 2013**)

 **Page 113**, Item 48: This question has been invalidated as a result of postpublication analysis and/or new data that are relevant to the question. Please select answer C to earn a point for this item and ensure completion of all items in this self-assessment examination, which is necessary for CME/MOC submission.

This item has been excluded because of inconsistencies in the normal values of 24-hour protein excretion given in the text, Table 6, and this question's critique. The normal value for 24-hour protein excretion is <200 mg/24 h. (**Added September 2013**)

Page 121, Item 75: In the second paragraph of the Stem, the sentence "There is abdominal guarding" should

be deleted. Although abdominal guarding is occasionally noted to be caused by nephrolithiasis, it is not considered a "classic" finding and is more commonly associated with peritoneal inflammation (which usually does not occur with kidney stones). **(Added April 2013)**

Neurology

Page vi: The first sentence under the heading "Permission/Consent for Use of Figures Shown in MKSAP 16 Neurology Multiple-Choice Questions" should read "The figure shown in Self-Assessment Test item 7..." (not "item 8" as listed). **(Added January 2013)**

Page xi (Neurology High-Value Care Recommendations): The third bullet on the right-hand side of the page should end "(see Item 7)" (not Item 8). Similarly, the fifth bullet should end "(see Item 8)" (not Item 7). **(Added January 2013)**



Page 11, Head Injury, Concussive Head Injury: In March 2013, after publication of MKSAP 16, the American Academy of Neurology published a summary of its updated evidence-based guideline on the evaluation and management of concussion in sports (Giza CC, Kutcher JS, Ashwal S, et al. Summary of evidence-based guideline update: Evaluation and management of concussion in sports: Report of the Guideline Development Subcommittee of the American Academy of Neurology. *Neurology*. 2013 March 18 [Epub ahead of print] [[PMID: 23508730](https://pubmed.ncbi.nlm.nih.gov/23508730/)]). This guideline updates assessment of risk factors for concussion, assessment of concussion, and short- and long-term management of concussion, including evaluation for return to play for sports-associated concussion. This supersedes the information contained in MKSAP 16 Neurology. See this article and also <http://www.aan.com/go/practice/concussion> for fuller information on this updated guideline. **(Added September 2013)**



Page 30, Acute Ischemic Stroke, Treatment, Thrombolysis. In the second full paragraph of the first column of this page (third paragraph of "Thrombolysis"), the second sentence through the end of the paragraph should be replaced with the following: "These techniques include local delivery of the thrombolytic agent at the site of a vascular occlusion or mechanical thrombectomy. Both methods have been shown to improve recanalization rates. A previous study showed intra-arterial thrombolytic agents to be superior to intravenous heparin alone if started within 6 hours of stroke onset in patients with large-vessel occlusions. However, subsequent clinical trials have not shown improved outcomes when catheter-based therapies are added to intravenous thrombolysis or a benefit in using intra-arterial therapies alone compared with intravenous thrombolysis. Further, no findings with neuroimaging have been identified that predict a favorable response to intra-arterial therapies. Therefore, intravenous thrombolysis is considered first-line therapy for patients with acute ischemic stroke seen within 4.5 hours of stroke onset. Mechanical thrombectomy remains a reasonable alternative for patients seen in this time frame who have an occlusion of a large intracranial artery but have a contraindication to thrombolytic therapy." **(Added September 2013)**



Page 32: In Acute Ischemic Stroke, Treatment, Figure 13 has been replaced because of recently published studies showing no benefit in adding catheter-based therapies to intravenous thrombolysis or in using intra-arterial therapies alone compared with intravenous thrombolysis. The previous figure legend should be replaced with the following legend: "Algorithm for treating patients within 6 hours of an ischemic stroke. AVM = arteriovenous malformation; ICU = intensive care unit; IV = intravenous; MCA = middle cerebral artery; NIHSS = National Institutes of Health Stroke Scale; PTT = partial thromboplastin time; rtPA

= recombinant tissue plasminogen activator." (**Added September 2013**)



Page 89, Item 11: This question has been invalidated as a result of postpublication analysis and/or new data that are relevant to the question. Please select answer B to earn a point for this item and ensure completion of all items in this self-assessment examination, which is necessary for CME/MOC submission. This item has been excluded because the American Academy of Neurology (AAN) recently published a summary of its updated evidence-based guideline on the evaluation and management of concussion in sports (Giza CC, Kutcher JS, Ashwal S, et al. Summary of evidence-based guideline update: Evaluation and management of concussion in sports: Report of the Guideline Development Subcommittee of the American Academy of Neurology. *Neurology*. 2013 March 18 [Epub ahead of print] [[PMID: 23508730](https://pubmed.ncbi.nlm.nih.gov/23508730/)]) that outlines a more individualized approach to the athlete with a concussion and makes specifying a particular time period to exclude an athlete from competition problematic. See this articles and also <http://www.aan.com/go/practice/concussion> for fuller information on this updated guideline. (**Added September 2013**)



Page 96, Item 38: The cerebrospinal fluid protein level in the table of laboratory values should be 150 mg/dL (1500 mg/L), not 15 mg/dL (150 mg/L) as listed. (**Added September 2013**)



Page 106, Item 81: In the first line on this page (fourth paragraph of the item), the word "right" should be replaced with the word "left" ("...shows a left thalamic intracerebral hemorrhage..."). (**Added September 2013**)

Page 106, Item 86: In the first sentence of the question, the phrase "...is evaluated for a 60-minute episode of..." should be replaced with the phrase "...is evaluated 1 day after experiencing a 60-minute episode of..." In the third sentence of the critique, which appears on page 148, the phrase "whose ABCD² scores are 3 or greater" should be followed by the phrase "within 72 hours of symptom onset." (**Added January 2013**)



Page 143, Item 74: In the first paragraph of the critique, the fifth sentence ("Inhibitors include macrolides...") should be replaced with the following sentence: "Drugs that strongly inhibit cytochrome P3A4 include macrolides, protease inhibitors, and azole antifungals (such as itraconazole); although fibric acid derivatives are only weak inhibitors of the cytochrome pathway, they are independently associated with muscle toxicity, particularly when administered concurrently with certain statin medications." (**Added September 2013**)



Page 149, Item 87: In the first full paragraph on this page (third paragraph of the critique), the phrase "proximally to distally" in line 5 should be replaced with "*distally to proximally*." (**Added September 2013**)

Pulmonary and Critical Care Medicine

Page 25: The second sentence under Other Agents should read: "Mucolytic agents (mucokinetic, mucoregulatory) may provide minor benefit to a few patients with viscous sputum; however, their use cannot currently be recommended." (**Added April 2013**)

[Page 25](#), Vaccines, second sentence: Guidelines on pneumococcal vaccination have been updated.

In October 2012, the Advisory Committee on Immunization Practices (ACIP) updated recommendations for pneumococcal vaccination in patients with immunocompromising conditions, anatomic or functional asplenia, cerebrospinal fluid (CSF) leaks, or cochlear implants. Immunocompromising conditions are defined as follows: congenital or acquired immunodeficiency, HIV infection, chronic kidney disease, the nephrotic syndrome, leukemia, lymphoma, Hodgkin disease, generalized malignancy, iatrogenic immunosuppression (such as long-term corticosteroid therapy), solid organ transplant, and multiple myeloma. For adults ≥ 19 years of age with an immunocompromising condition, functional asplenia, a CSF leak, or cochlear implants who have never received any pneumococcal vaccination, an initial dose of 13-valent pneumococcal conjugate vaccine (PCV-13) should be given, followed by a first dose of 23-valent pneumococcal polysaccharide vaccine (PPSV-23) at least 8 weeks later. A single, second dose of PPSV-23 should be given 5 years after the first PPSV-23 vaccination in those with anatomic or functional asplenia or with an immunocompromising condition. For adults ≥ 19 years of age with immunocompromising conditions, anatomic or functional asplenia, CSF leaks, or cochlear implants who have previously received at least one dose of PPSV-23, a single PCV-13 dose should be given ≥ 1 year after their last PPSV-23 immunization. All patients who have ever received a PPSV-23 vaccination should receive another dose of PPSV-23 at age 65 years, or later if at least 5 years have elapsed since their last PPSV-23 dose. **(Added April 2013)**

[Page 28](#), Table 16, 5th row: "Postbronchodilator total lung capacity of $>150\%$ AND residual lung volume $>100\%$ of predicted" should read, "Postbronchodilator total lung capacity of $>100\%$ AND residual lung volume $>150\%$ of predicted." **(Added April 2013)**

[Page 84](#), the last sentence under Hyperglycemia should read, "Therefore, based on this data, the ACP Clinical Practice Guideline for Use of Intensive Insulin Therapy for the Management of Glycemic Control in Hospitalized Patients recommends that, following initial stabilization, patients with severe sepsis and hyperglycemia who are admitted to the ICU should receive insulin therapy to achieve a plasma glucose level between 140 and 200 mg/dL (7.8 and 11.1 mmol/L)." The ACP Clinical Practice Guideline can be found here: <http://annals.org/article.aspx?articleid=746815>. **(Added April 2013)**

[Page 89](#), the fifth sentence under Alcohols should be deleted and the following should be inserted in its place: "As withdrawal becomes more severe, patients may experience seizures and/or hallucinations, usually within 12 to 24 hours of abstinence. Delirium tremens is a systemic syndrome characterized by hypertension, tachycardia, diaphoresis, fever, disorientation, and hallucinations." **(Added April 2013)**

[Page 112](#), Item 46, third paragraph, second sentence should read: "*Ventilation-perfusion lung scanning shows multiple bilateral segmental filling defects consistent with a high probability of pulmonary embolism.*" **(Added April 2013)**

[Page 117](#), Item 65: This question has been invalidated as a result of postpublication analysis and/or new data that are relevant to the question. Please select answer C to earn a point for this item and ensure completion of all items in this self-assessment examination, which is necessary for CME/MOC submission. Following the publication of MKSAP 16, the American College of Chest Physicians issued a revised clinical practice guideline for the diagnosis and management of lung cancer (Detterbeck FC, Lewis SZ, Diekemper R, Addrizzo-Harris D, Alberts WM. Executive Summary: Diagnosis and management of lung cancer, 3rd ed: American College of Chest Physicians evidence-based clinical practice guidelines. Chest. 2013;143(5 Suppl):7S-37S. [PMID: 23649434]). These updated guidelines recommend review of prior imaging, if available, in a patient with a pulmonary nodule. In a patient with a solid, indeterminate nodule that shows

clear evidence of malignant growth on serial imaging, nonsurgical biopsy and/or surgical resection is recommended unless specifically contraindicated. **(Added April 2013 and updated September 2013)**

[Page 119](#), Item 72, the last sentence of the first paragraph should read, "She notes a 2-month history of new stiffness and mild pain in her joints, for which she takes NSAIDs as needed." **(Added April 2013)**

[Page 147](#), critique of Item 41, 8th and 10th sentences: "the nephritic syndrome" should read "the nephrotic syndrome." **(Added April 2013)**

[Page 147](#), critique of Item 41, 11th and 12th sentences: See [new information](#) above clarifying the use of pneumococcal vaccination in patients with immunocompromising conditions. **(Added April 2013)**

[Page 172](#), critique of Item 95, second sentence: "... (2) postbronchodilator total lung capacity greater than 150% and residual volume greater than 100% of predicted..." should read, "... (2) postbronchodilator total lung capacity greater than 100% and residual volume greater than 150% of predicted..." **(Added April 2013)**

Rheumatology



[Page 14](#): Tocilizumab is incorrectly listed as a *chimeric* monoclonal antibody; this agent is a *humanized* monoclonal antibody. **(Added September 2013)**

[Page 30](#): In Psoriatic Arthritis, the callout for Figure 14 has been deleted from the third paragraph of this section and moved to the second paragraph as follows: "Nails should be examined for pitting or onycholysis (Figure 13 and Figure 14)." **(Added April 2013)**

[Page 58](#): In the second paragraph of Management, Pharmacologic Therapy, the second sentence "Those with arthralgia or tenosynovitis rather than a frank septic arthritis can be transitioned to oral therapy with ciprofloxacin after symptoms subside" has been deleted.

The following should appear after "Treatment is usually continued for 7 to 14 days depending on the severity of illness": "Although parenteral antibiotics have traditionally been changed to an oral agent following an initial response to therapy to complete a full treatment course, increasing resistance to oral antibiotics has limited their effectiveness for this use. Fluoroquinolones (including ciprofloxacin) are no longer recommended for either initial or step-down therapy for disseminated gonococcal infection. Cefixime is a reasonable alternative for oral therapy, although increasing resistance is of concern for longer-term treatment of disseminated disease. Continuing parenteral antibiotics to complete a therapeutic course should be considered, particularly in areas with known increased resistance to oral cephalosporins." **(Added April 2013)**

[Page 91](#), Item 39: This question has been invalidated as a result of postpublication analysis and/or new data that are relevant to the question. Please select answer C to earn a point for this item and ensure completion of all items in this self-assessment examination, which is necessary for CME/MOC submission. This item has been excluded because the original question did not mention that the patient had hemoptysis, which, in combination with her other clinical findings, suggests pulmonary vasculitis and the need for a diagnostic open lung biopsy. **(Added April 2013)**

Invalidated Questions

The following questions have been invalidated as a result of postpublication analysis and/or new data that are relevant to the question: [Item 12](#) from Cardiovascular Medicine, [item 7](#) from General Internal Medicine, [item 114](#) from Hematology and Oncology, [item 97](#) from Infectious Disease, [item 48](#) from Nephrology, [item 11](#) from Neurology, [item 65](#) from Pulmonary and Critical Care Medicine, and [item 39](#) from Rheumatology.

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