USMLE-Step-3 Exam

Volume: 802 Questions

Question: 1
A 45-year-old male comes to your office for his first annual checkup in the last 10 years. On first impression, he appears overweight but is otherwise healthy and has no specific complaints. He has a brother with diabetes and a sister with high blood pressure. Both of his parents are deceased and his father died of a stroke at age 73. He is a long-standing heavy smoker and only drinks alcohol on special occasions. On physical examination, his blood pressure is 166/90 in the left arm and 164/88 in the right arm. The rest of the examination is unremarkable. He is concerned about his health and does not want to end up on medication, like his siblings.

Regarding your initial recommendations, which of the following would be most appropriate?

A. You should take no action and ask him to return to the clinic in 1 year for a repeat blood pressure check.

B. You should immediately start him on an oral antihypertensive medication and ask him to return to the clinic in 1 week.

C. You should advise him to stop smoking, start a strict diet and exercise routine with the goal of losing weight, and return to the clinic in 6 months.

D. You should consider starting a workup for potential causes of secondary hypertension.

E. You should screen him for diabetes and evaluate him for other cardiovascular risk factors before proceeding any further.

Answer: E

Question: 2
A 45-year-old male comes to your office for his first annual checkup in the last 10 years. On first impression, he appears overweight but is otherwise healthy and has no specific complaints. He has a brother with diabetes and a sister with high blood pressure. Both of his parents are deceased and his father died of a stroke at age 73. He is a long-standing heavy smoker and only drinks alcohol on special occasions. On physical examination, his blood pressure is 166/90 in the left arm and 164/88 in the right arm. The rest of the examination is unremarkable. He is concerned about his health and does not want to end up on medication, like his siblings

In the initial evaluation of a patient such as this, which of the following should be routinely recommended?

A. a urine microalbumin/creatinine ratio

B. an echocardiogram

C. thyroid function tests

D. renal function tests (serum creatinine and blood urea nitrogen [BUN])

E. an exercise stress test

Answer: D

Question: 3
A 42-year-old man without prior significant medical history comes to your office for evaluation of chronic diarrhea of 12 months duration, although the patient states he has had loose stools for many years. During this time he has lost 25 lbs. The diarrhea is large volume, occasionally greasy, and nonbloody. In addition, the patient has mild abdominal pain for much of the day. He has been smoking a pack of cigarettes a day for 20 years and drinks approximately five beers per day. His physical examination reveals a thin male with temporal wasting and generalized muscle loss. He has glossitis and angular cheilosis. He has excoriations on his elbows and knees and scattered papulovesicular lesions in these regions as well.

Which of the following is the best test to confirm the suspected diagnosis?

A. abdominal CT scan with contrast

B. small bowel x-ray

C. esophagogastroduodenoscopy with small bowel biopsy

D. colonoscopy with colonic biopsy

E. 72-hour fecal fat quantification

Answer: C

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has been smoking a pack of cigarettes a day for 20 years and drinks approximately five beers per day. His physical examination reveals a thin male with temporal wasting and generalized muscle loss. He has glossitis and angular cheilosis. He has excoriations on his elbows and knees and scattered papulovesicular lesions in these regions as well.

What is the most serious long-term complication this patient could face?

A. pancreatic cancer

B. small bowel cancer

C. gastric cancer

D. colon cancer

E. rectal cancer

Answer: B

Question: 5
A 24-year-old male medical student is admitted to the hospital for the evaluation of a 3-month history of bloody stools. The patient has approximately six blood stained or blood streaked stools per day, associated with relatively little, if any, pain. He has not had any weight loss, and he has been able to attend classes without interruption. He denies any fecal incontinence. He has no prior medical history. Review of systems is remarkable only for occasional fevers and the fact that the patient quit smoking approximately 8 months ago. A colonoscopy is performed and reveals a granular, friable colonic mucosal surface with loss of normal vascular pattern from the anal verge to the hepatic flexure of the colon. Biopsies reveal prominent neutrophils in the epithelium and cryptitis with focal crypt abscesses, and no dysplasia. The patient is diagnosed with ulcerative colitis.

Which of the following is the best initial treatment for this patient?

A. colectomy

B. oral prednisone

C. oral metronidazole

D. cortisone enemas

E. intravenous cyclosporine

Answer: B

Question: 6
A 24-year-old male medical student is admitted to the hospital for the evaluation of a 3-month history of bloody stools. The patient has approximately six blood stained or blood streaked stools per day, associated with relatively little, if any, pain. He has not had any weight loss, and he has been able to attend classes without interruption. He denies any fecal incontinence. He has no prior medical history. Review of systems is remarkable only for occasional fevers and the fact that the patient quit smoking approximately 8 months ago. A colonoscopy is performed and reveals a granular, friable colonic mucosal surface with loss of normal vascular pattern from the anal verge to the hepatic flexure of the colon. Biopsies reveal prominent neutrophils in the epithelium and cryptitis with focal crypt abscesses, and no dysplasia. The patient is diagnosed with ulcerative colitis.

While on the inpatient service, the patient is noted to have a serum alkaline phosphatase of 380 U/L and a bilirubin of 2.4 mg/dL. An ERCP is performed, and the following cholangiogram is obtained. In addition to ulcerative colitis, the patient likely has what other illness?

A. primary biliary cirrhosis

B. Wilson disease

C. alpha-1 antitrypsin deficiency

D. hereditary hemochromatosis

E. primary sclerosing cholangitis (PSC)

Answer: E

Question: 7
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In addition to an increased lifetime risk of colon cancer, the patient is also at increased risk for which of the following tumors?

A. hepatocellular carcinoma

B. hepatoblastoma

C. desmoid tumors

D. small bowel lymphoma

E. cholangiocarcinoma

Answer: E

Question: 8
A 61-year-old man comes to your office for a checkup. He currently feels well and has no focal complaints.
He has a past medical history significant for wellcontrolled hypertension, and his gallbladder was removed 3 years ago in the setting of acute cholecystitis. He does not smoke and drinks one to two alcoholic beverages per day. Family history is remarkable for colon cancer in his mother at age 45 and a brother at age 49. He has a sister who developed endometrial cancer at age 53. He has never undergone colon cancer screening and is interested in pursuing this. The patient's family history is strongly suggestive of which of the following?

A. familial adenomatous polyposis (FAP) syndrome

B. hereditary nonpolyposis colorectal cancer (HNPCC) syndrome

C. Peutz-Jeghers syndrome

D. Cronkhite-Canada syndrome

E. Turcot syndrome

Answer: B

Question: 9
A 50-year-old female presents to your office for evaluation of solid food dysphagia without weight loss. Symptoms have been present for 6 months and are progressive. The patient has had two episodes of near impaction, but copious water ingestion and repeated swallows allowed the food

bolus to pass. She has never had to present to the ER for disimpaction. She drinks five to six beers per day, loves spicy foods, and smokes a pack of cigarettes daily with a total lifetime history of 30 pack-years. She has had intermittent heartburn symptoms for years and has not sought treatment. She takes hydrochlorothiazide for hypertension. Review of symptoms reveals chronic cough. Physical examination is unremarkable. Upper endoscopy reveals a distal esophageal stricture with inflammatory changes. Esophageal biopsies reveal benign mucosa with chronic inflammation. Gastric biopsies are unremarkable. Helicobacter pylori testing is negative.

What is the most likely etiology of the patient's stricture?

A. alcohol ingestion

B. tobacco use

C. gastroesophageal reflux

D. hydrochlorothiazide

E. spicy food ingestion

Answer: C

Question: 10
A 50-year-old female presents to your office for evaluation of solid food dysphagia without weight loss. Symptoms have been present for 6 months and are progressive. The patient has had two episodes of near impaction, but copious water ingestion and repeated swallows allowed the food bolus to pass. She has never had to present to the ER for disimpaction. She drinks five to six beers per day, loves spicy foods, and smokes a pack of cigarettes daily with a total lifetime history of 30 pack-years. She has had intermittent heartburn symptoms for years and has not sought treatment. She takes hydrochlorothiazide for hypertension. Review of symptoms reveals chronic cough. Physical examination is unremarkable. Upper endoscopy reveals a distal esophageal stricture with inflammatory changes. Esophageal biopsies reveal benign mucosa with chronic inflammation. Gastric biopsies are unremarkable. Helicobacter pylori testing is negative.

What is the next best step in therapy for this patient?

A. esophageal dilation

B. histamine receptor antagonist therapy

C. PPI therapy

D. esophageal dilation with histamine receptor antagonist therapy

E. esophageal dilation with PPI inhibitor therapy

Answer: E

Question: 11
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The patient is at increased risk for which of the following illnesses?

A. esophageal squamous cell cancer

B. esophageal adenocarcinoma

C. gastric cancer

D. gastric lymphoma

E. duodenal adenocarcinoma

Answer: B

Question: 12
A 65-year-old man presents to your office for evaluation of abdominal pain. The patient states that he has epigastric pain that radiates to his back. The pain is worse with eating and improves with fasting. The pain has been present for 6 months and is gradually worsening. The patient has lost 15 lbs but feels his oral intake has been adequate. He complains of greasy stools and frequent thirst and urination. Examination reveals a thin male with temporal wasting and

oderate abdominal pain with palpation. The patient consumes approximately 1015 beers per day and smokes a pack of cigarettes per day for the past 20 years.

What would be the best initial test to do in this patient?

A. spot fecal fat collection

B. 72-hour fecal fat collection

C. CT scan of the abdomen

D. ERCP

E. upper endoscopy

Answer: C

Question: 13
A 65-year-old man presents to your office for evaluation of abdominal pain. The patient states that he has epigastric pain that radiates to his back. The pain is worse with eating and improves with fasting. The pain has been present for 6 months and is gradually worsening. The patient has lost 15 lbs but feels his oral intake has been adequate. He complains of greasy stools and frequent thirst and urination. Examination reveals a thin male with temporal wasting and oderate abdominal pain with palpation. The patient consumes approximately 1015 beers per day and smokes a pack of cigarettes per day for the past 20 years.

On further questioning, the patient reports that he recently had a motor vehicle accident at night because he felt he could not see clearly. The most likely cause of this symptom is which of the following?

A. vitamin B12 deficiency

B. vitamin C deficiency

C. vitamin D deficiency

D. vitamin A deficiency

E. vitamin K deficiency

Answer: D

Question: 14
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On further evaluation, the patient is found to be diabetic. He has an elevated HgbA1C and fasting hyperglycemia. The patient is sent for diabetic teaching sessions and begun on insulin therapy, but is unable to achieve euglycemia. He experiences frequent bouts of symptomatic hypoglycemia requiring ER visits.
What is the most likely cause for these episodes?

A. insulin overdose

B. impaired glucagon production

C. inadequate oral intake

D. vitamin K deficiency

E. vitamin B12 deficiency

Answer: B

Question: 15
A 65-year-old man presents to your office for evaluation of abdominal pain. The patient states that he has epigastric pain that radiates to his back. The pain is worse with eating and improves with fasting. The pain has been present for 6 months and is gradually worsening. The patient has lost 15 lbs but feels his oral intake has been adequate. He complains of greasy stools and frequent thirst and urination. Examination reveals a thin male with temporal wasting and oderate abdominal pain with palpation. The patient consumes approximately 1015 beers per day and smokes a pack of cigarettes per day for the past 20 years.

The patient's abdominal pain worsens and his weight loss progresses despite therapy, and you suspect that he may have a malignancy. If a malignancy was present, which tumor marker would be most likely to be elevated in this patient?

A. carcinoembryonic antigen (CEA)

B. prostate-specific antigen (PSA)

C. cancer antigen (CA)-125

D. -Fetoprotein (AFP)

E. CA-19-9

Answer: E

Question: 16
A 60-year-old woman arrives at your office for a routine physical examination. During the course of her examination she asks you about osteoporosis. She is concerned about her risk for osteoporosis, as her mother suffered from multiple vertebral compression fractures at the age of 60. Your patient reports that she still smokes cigarettes ("although I know they are bad for me") and has one alcoholic beverage a week.
She reports having had menopause 5 years ago and experiencing a deep venous thrombosis approximately 20 years ago. She is proud of the fact that she regularly exercises at the local fitness center.
She has been taking 1500 mg of calcium with 800 IU of vitamin D every day. You suspect that she is at risk for osteoporosis.

Which of the following tests is best to detect and monitor osteoporosis?

A. plain film radiography

B. dual photon absorptiometry

C. single photon absorptiometry

D. dual-energy x-ray absorptiometry (DEXA)

E. quantitative CT scan

Answer: D

Question: 17
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and has one alcoholic beverage a week.
She reports having had menopause 5 years ago and experiencing a deep venous thrombosis approximately 20 years ago. She is proud of the fact that she regularly exercises at the local fitness center.
She has been taking 1500 mg of calcium with 800 IU of vitamin D every day. You suspect that she is at risk for osteoporosis.

After performing the appropriate imaging study, you determine that your patient has osteoporosis. Of the following choices, which is risk factor most likely contributing to her osteoporosis?

A. active lifestyle

B. late menopause

C. cigarette smoking

D. frequency of alcohol intake

E. her intake of calcium and vitamin D

Answer: C

Question: 18
A 60-year-old woman arrives at your office for a routine physical examination. During the course of her examination she asks you about osteoporosis. She is concerned about her risk for osteoporosis, as her mother suffered from multiple vertebral compression fractures at the age of 60. Your patient reports that she still smokes cigarettes ("although I know they are bad for me") and has one alcoholic beverage a week.
She reports having had menopause 5 years ago and experiencing a deep venous thrombosis approximately 20 years ago. She is proud of the fact that she regularly exercises at the local fitness center.
She has been taking 1500 mg of calcium with 800 IU of vitamin D every day. You suspect that she is at risk for osteoporosis.
After a thorough discussion with your patient, you determine that pharmacologic intervention would be beneficial given the severity of her osteoporosis. Which of the following is most appropriate for your patient?

A. estrogen replacement therapy

B. combined HRT with estrogen and progestin

C. alendronate

D. calcitonin intranasal spray

E. raloxifene

Answer: C

Question: 19
A 28-year-old male, well known to your clinic, presents for management of swelling, pain, and tenderness that has developed in his left ankle and right knee. It has persisted for 1 month. Your patient reports that he developed severe diarrhea after a picnic 1 month prior to the onset of his arthritis. During the interval between the diarrhea and onset of arthritis, he developed a "pink eye" that lasted for 4 days. He denies any symptoms of back pain or stiffness. You remember that he was treated with ceftriaxone and doxycycline for gonorrhea 2 years ago, which he acquired from sexual activity with multiple partners. Since that time, he has been in a monogamous relationship with his wife and has not had any genitourinary symptoms. He promises that he has been faithful to his wife and has not engaged in unprotected sexual activity outside his marriage. His physical examination is notable for a swollen left ankle, swollen right knee, and the absence of penile discharge or any skin lesions.
Which of the following is the most likely diagnosis?

A. pseudogout

B. gout

C. reactive arthritis

D. resistant gonococcal arthritis

E. ankylosing spondylitis

Answer: C

Question: 20
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from sexual activity with multiple partners. Since that time, he has been in a monogamous relationship with his wife and has not had any genitourinary symptoms. He promises that he has been faithful to his wife and has not engaged in unprotected sexual activity outside his marriage. His physical examination is notable for a swollen left ankle, swollen right knee, and the absence of penile discharge or any skin lesions.

What would be the appropriate management for this patient's arthritis?

A. Screen him for the suspected disease with HLA-B27 testing.

B. Treat with daily indomethacin (150200 mg daily).

C. Start him on empiric antibiotics.

D. Start treatment with prednisone 10 mg daily.

E. Assume that the patient is not being honest and perform the appropriate urogenital testing to confirm gonorrhea.

Answer: B

Question: 21
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The patient's symptoms do not respond to your initial therapeutic management. You suspect that his condition is refractory to treatment. Which of the following should you consider at this time?

A. He may have human immunodeficiency virus (HIV) infection and should be tested.

B. His condition will require high doses of prednisone (60 mg daily) for adequate control.

C. His joints are obviously not infected and should be directly injected with corticosteroids.

D. He must have a disseminated bacterial infection that will require IV antibiotics.

E. He is resistant to indomethacin, so the dose should be doubled to 400 mg daily.

Answer: A

Question: 22
A 42-year-old man presents to your clinic with a 1-week history of pain and inflammation involving his right first metatarsophalangeal (MTP) joint. He describes the pain as sudden in onset and worse at night. He denies experiencing any fever or traumatic injury to the joint and states that he has never had this type of pain before. He denies any chronic medical conditions, any prior surgery, and any current medication use.
Besides an erythematous and exquisitely tender right first MTP joint, the remainder of his physical examination is unremarkable.
Which of the following is true of the patient's condition?

A. It commonly presents in premenopausal women.

B. It commonly presents as a monoarticular arthritis.

C. Episodes of pain and inflammation become more frequent but resolve more quickly as the disease progresses.

D. The presence of tophi is a common early finding.

E. A blood test is the diagnostic gold standard.

Answer: B

Question: 23
A 54-year-old Asian female with no significant medical history presents with frontal headache, eye pain, nausea, and vomiting. Her abdominal examination shows mild diffuse tenderness but no rebound or guarding. Her mucous membranes are dry. Her vision is blurry in both eyes, her eyes are injected but her extraocular muscles are intact. Her pupils are mid-dilated and fixed
Which of the following is the most likely diagnosis?

A. diabetic ketoacidosis (DKA)

B. appendicitis

C. angle closure glaucoma

D. perforated colon due to inflammatory bowel disease (IBD)

E. cerebellar malignancy

Answer: C

Question: 24
A 64-year-old male with a history of hypertension and tobacco abuse presents for follow-up after a routine physical during which he was found to have 45 red blood cells (RBCs) per high-power field (HPF) on a screening urinalysis. The urinalysis was negative for leukocytes, nitrites, epithelial cells, and ketones. The patient denies any complaints and the review of systems is essentially negative.

What would be your initial approach in the workup of this patient with asymptomatic microscopic hematuria?

A. check PSA and urine culture

B. CT scan with and without contrast of the abdomen and pelvis

C. intravenous pyelography (IVP)

D. observation and reassurance as patient is asymptomatic

E. repeat urinalysis

Answer: E

Question: 25
A 64-year-old male with a history of hypertension and tobacco abuse presents for follow-up after a routine physical during which he was found to have 45 red blood cells (RBCs) per high-power field (HPF) on a screening urinalysis. The urinalysis was negative for leukocytes, nitrites, epithelial cells, and ketones. The patient denies any complaints and the review of systems is essentially negative .

Which is...?

A. change of antihypertensive agent and recommendation to patient to discontinue smoking

B. image the upper and lower urinary tracts

C. antibiotics for 1 month

D. expectant management with follow-up urinalysis in 6 months

E. nephrology consultation

Answer: B

Question: 26
A 64-year-old male with a history of hypertension and tobacco abuse presents for follow-up after a routine physical during which he was found to have 45 red blood cells (RBCs) per high-power field (HPF) on a screening urinalysis. The urinalysis was negative for leukocytes, nitrites, epithelial cells, and ketones. The patient denies any complaints and the review of systems is essentially negative.

In detecting microscopic hematuria, which of the following is true?

A. The office urine dipstick is 91100% sensitive and 6599% specific for detection of RBCs, Hgb, and myoglobin.

B. Urinalysis must reveal a minimum of 5 RBCs per HPF in order to continue the workup.

C. The presence of epithelial cells makes the urinalysis invalid.

D. The presence of "large blood" on a urine dipstick effectively distinguishes RBCs from myoglobinuria.

E. Any urinalysis with RBCs should be recollected via a catheterized specimen prior to initiating a workup for hematuria.

Answer: A

Question: 27
A 52-year-old man presents to the ED with a complaint of rectal bleeding and hematuria. He has a medical history significant for atrial fibrillation diagnosed 10 years ago and states that he takes metoprolol as well as warfarin for this condition. Upon examination, you find that his blood pressure is 122/78, his pulse is 84, his respiratory rate is 18, and his O2 saturation is 98% on room air. He has an irregularly irregular heart rhythm, gingival bleeding, and some bruises on his extremities. He has a positive fecal occult blood test, and laboratory studies

return showing an international normalized ratio (INR) of 16.5.
You order that the patient's warfarin be held. Which of the following is the most appropriate additional intervention at this time?

A. repeat INR measurement as an outpatient in 5 days

B. admit the patient to the hospital and conduct serial INR measurements

C. administer vitamin K1

D. administer fresh frozen plasma

E. administer vitamin K1 and fresh frozen plasma

Answer: E

Question: 28
A 72-year-old African American male presents for a routine health examination. He states that he would like to have a "screening for cancer." In the United States, based on his sex, race, and age, what is the most likely malignancy for this patient?

A. lung cancer

B. prostate cancer

C. colon cancer

D. testicular cancer

E. multiple myeloma

Answer: B

Question: 29
A 72-year-old man comes to your clinic for the first time, accompanied by his wife. His wife states that she is concerned because he has been growing increasingly forgetful over the past year. Within the past month, he has forgotten to turn off the stove and has got lost while walking to the post office one block away from their home. His past medical history is significant for well-controlled diabetes and chronic lower back pain. He has no history of falls or traumatic injury to the head. Examination of the patient is significant for a score of 18 on a Mini Mental Status Examination (MMSE). During the administration of the MMSE, the patient blurts out

that his wife brought him to the doctor because she is having an extramarital relationship.

Which of the following accurately describes this patient's condition?

A. There is no genetic basis for development of this disease.

B. It is usually abrupt in onset.

C. There is no correlation between age and prevalence of this disease.

D. Environmental exposure is a proven risk factor for development of this disease.

E. It is one of the most common terminal illnesses in developed nations.

Answer: E

Question: 30
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Use of which of the following medications would be the most likely to lead to worsening of symptoms in this patient?

A. risperidone

B. amitriptyline

C. olanzapine

D. quetiapine

E. trazodone

Answer: B

Question: 31
A 28-year-old woman presents to your clinic complaining of feeling "on edge." Upon further questioning, you discover that she has also noticed problems with irritability, insomnia, fatigue, and restlessness. She also has a history of worrying about things that seem to not bother those around her. She states these symptoms have been present for years but have recently become worse. When you try to gather more information, she interrupts to say that she cannot stay much longer because she is afraid that she will lose her new job as a machinist.
Which of the following medications would be most appropriate in this patient?

A. diazepam

B. amitriptyline

C. doxepin

D. oxazepam

E. buspirone

Answer: E

Question: 32
A 54-year-old male with uncontrolled type II diabetes and well-controlled hypertension presents with complaints of erectile dysfunction. The patient requests Viagra (sildenafil), as his friends have used it with success. However, he is concerned as he was told by someone that Viagra can be fatal if used with some blood pressure medications. You would advise the patient that the use of which of the following is contraindicated in patients taking sildenafil?

A. isosorbide mononitrate

B. metoprolol

C. verapamil

D. captopril

E. clonidine

Answer: A

Question: 33

Bupivacaine is a local anesthetic agent that is much more potent and the duration of action of which is considerably longer than procaine. Possible reasons for this difference include which of the following?

A. higher partition coefficient for bupivacaine than for procaine

B. covalent binding to the receptor site

C. lower protein binding of bupivacaine than procaine

D. decreased rate of metabolism of procaine compared to bupivacaine

E. bupivacaine constricts blood vessels

Answer: A

Question: 34
A 68-year-old White male, with a history of hypertension, an 80 pack-year history of tobacco use and emphysema, is brought into the ER because of 4 days of progressive confusion and lethargy. His wife notes that he takes amlodipine for his hypertension. He does not use over-the-counter (OTC) medications, alcohol, or drugs. Furthermore, she indicates that he has unintentionally lost approximately 30 lbs in the last 6 months. His physical examination shows that he is afebrile with a blood pressure of 142/85, heart rate of 92 (no orthostatic changes), and a room-air O2 saturation of 91%. He is 70 kg. The patient appears cachectic. He is arousable but lethargic and unable to follow any commands. His mucous membranes are moist, heart rate regular without murmurs or a S3/S4 gallop, and extremities without any edema. His pulmonary examination shows mildly diminished breath sounds in the right lower lobe with wheezing bilaterally. The patient is unable to follow commands during neurologic examination but moves all his extremities spontaneously. Laboratory results are as follows:
Blood
Sodium: 109
Potassium: 3.8
Chloride: 103
CO2: 33
BUN: 17
Creatinine: 1.1
Glucose: 95
Urine osmolality: 600
Plasma osmolality: 229
White blood cell (WBC): 8000
Hgb: 15.8
Hematocrit (HCT): 45.3

Platelets: 410
Arterial blood gas: pH 7.36/pCO2 60/pO2 285
A chest x-ray (CXR) reveals a large right hilar mass.

What is the most likely cause of this patient's altered mental status?

A. sepsis syndrome with pneumonia

B. ischemic stroke

C. central pontine myelinolysis

D. cerebral edema

E. respiratory acidosis

Answer: D

Question: 35
A 68-year-old White male, with a history of hypertension, an 80 pack-year history of tobacco use and emphysema, is brought into the ER because of 4 days of progressive confusion and lethargy. His wife notes that he takes amlodipine for his hypertension. He does not use over-the-counter (OTC) medications, alcohol, or drugs. Furthermore, she indicates that he has unintentionally lost approximately 30 lbs in the last 6 months. His physical examination shows that he is afebrile with a blood pressure of 142/85, heart rate of 92 (no orthostatic changes), and a room-air O2 saturation of 91%. He is 70 kg. The patient appears cachectic. He is arousable but lethargic and unable to follow any commands. His mucous membranes are moist, heart rate regular without murmurs or a S3/S4 gallop, and extremities without any edema. His pulmonary examination shows mildly diminished breath sounds in the right lower lobe with wheezing bilaterally. The patient is unable to follow commands during neurologic examination but moves all his extremities spontaneously. Laboratory results are as follows:
Blood
Sodium: 109
Potassium: 3.8
Chloride: 103
CO2: 33
BUN: 17
Creatinine: 1.1
Glucose: 95
Urine osmolality: 600
Plasma osmolality: 229
White blood cell (WBC): 8000

Hgb: 15.8
Hematocrit (HCT): 45.3
Platelets: 410
Arterial blood gas: pH 7.36/pCO2 60/pO2 285
A chest x-ray (CXR) reveals a large right hilar mass.

Which of the following would be the optimal choice of solution to infuse in order to adequately correct this patient's hyponatremia?

A. D5W with 20 meq/L KCl at 200 mL/h

B. 0.9% saline at 125 mL/h

C. 0.45% saline at 100 mL/h

D. 3% saline at 35 mL/h

E. 0.45% saline with 30 meq/L KCl at 100 mL/h

Answer: D

Question: 36
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Hematocrit (HCT): 45.3
Platelets: 410
Arterial blood gas: pH 7.36/pCO2 60/pO2 285
A chest x-ray (CXR) reveals a large right hilar mass.

Which of the following is the correct statement regarding the treatment of hyponatremia?

A. Desmopressin acetate (DDAVP), used in conjunction with intravenous saline, will help correct the serum sodium.

B. Correction of sodium slowly by 3 meq/day will prevent any subsequent neurologic injury.

C. Correction of serum sodium by 15 meq over 24 hours could lead to permanent neurologic injury.

D. Diuretics should be avoided in the treatment of hyponatremia.

E. Potassium should always be added to IV saline solutions when treating both hyponatremia and hypokalemia.

Answer: C

Question: 37
A 53-year-old Black male, with a history of hypertension, hepatitis C, and newly diagnosed nonsmall cell lung cancer, undergoes his first round of chemotherapy, which includes cisplatin. You are called to see this patient 5 days into his hospitalization for oliguria and laboratory abnormalities. Other than the chemotherapy, he is receiving lansoprazole, acetaminophen, and an infusion of D5-- 0.9% normal saline at 50 mL/h. On examination, his BP is 98/60 and heart rate is irregular, between 40 and 50 bpm. His physical examination shows a middle-aged male in no acute distress. His cardiac examination is unremarkable, his lungs show bibasilar crackles, and the abdominal examination is positive for a palpable spleen tip without any hepatomegaly or abdominal tenderness. He has trace bilateral ankle edema. His distal pulses are irregular. The neurologic examination was unremarkable. His laboratory (serum sample) results are as follows

	Day 1	Day 5	
Sodium	135	145	
Potassium	4.4	6.8	
Chloride		100	108
CO2	24	20	
BUN	15	35	
Creatinine	1.5	3.4	
Glucose	118	152	
Uric acid		6.5	15.3
Phosphate	4.4	8.3	
Calcium	9.0	7.5	
Uric acid		6.5	15.3
Lactate dehydrogenase (LDH)	285	994	

Which electrolyte/acid-base abnormality is most likely responsible for the findings on physical examination?

A. hypernatremia

B. hyperkalemia

C. metabolic acidosis

D. hyperphosphatemia

E. hyperuricemia

Answer: B

Question: 38
A 53-year-old Black male, with a history of hypertension, hepatitis C, and newly diagnosed nonsmall cell lung cancer, undergoes his first round of chemotherapy, which includes cisplatin. You are called to see this patient 5 days into his hospitalization for oliguria and laboratory abnormalities. Other than the chemotherapy, he is receiving lansoprazole, acetaminophen, and an infusion of D5-- 0.9% normal saline at 50 mL/h. On examination, his BP is 98/60 and heart rate is irregular, between 40 and 50 bpm. His physical examination shows a middle-aged male in no acute distress. His cardiac examination is unremarkable, his lungs show bibasilar crackles, and the abdominal examination is positive for a palpable spleen tip without any hepatomegaly or abdominal tenderness. He has trace bilateral ankle edema. His distal pulses are irregular. The neurologic examination was unremarkable. His laboratory (serum sample) results are as follows

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Phosphate	4.4	8.3	
Calcium	9.0	7.5	
Uric acid		6.5	15.3
Lactate dehydrogenase (LDH)	285	994	

What is the most likely etiology of this patient's acute renal failure?

A. renal tubular deposition of uric acid

B. calcium oxalate kidney stones causing partial urinary tract obstruction

C. renal tubular injury due to cisplatin

D. ischemic acute tubular necrosis from a decreased cardiac output

E. type II cryoglobulinemia due to hepatitis C

Answer: A

Question: 39
A 53-year-old Black male, with a history of hypertension, hepatitis C, and newly diagnosed nonsmall cell lung cancer, undergoes his first round of chemotherapy, which includes cisplatin. You are called to see this patient 5 days into his hospitalization for oliguria and laboratory abnormalities. Other than the chemotherapy, he is receiving lansoprazole, acetaminophen, and an infusion of D5-- 0.9% normal saline at 50 mL/h. On examination, his BP is 98/60 and heart rate is irregular, between 40 and 50 bpm. His physical examination shows a middle-aged male in no acute distress. His cardiac examination is unremarkable, his lungs show bibasilar crackles, and the abdominal examination is positive for a palpable spleen tip without any hepatomegaly or abdominal tenderness. He has trace bilateral ankle edema. His distal pulses are irregular. The neurologic examination was unremarkable. His laboratory (serum sample) results are as follows

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Phosphate	4.4	8.3	
Calcium	9.0	7.5	
Uric acid		6.5	15.3
Lactate dehydrogenase (LDH)	285	994	

What would be the most likely finding on this patient's ECG?

A. shortened P-R segment

B. prominent U wave

C. widened QRS complexes

D. flattened T waves

E. atrial fibrillation

Answer: C

Question: 40
A 53-year-old Black male, with a history of hypertension, hepatitis C, and newly diagnosed nonsmall cell lung cancer, undergoes his first round of chemotherapy, which includes cisplatin. You are called to see this patient 5 days into his hospitalization for oliguria and laboratory abnormalities. Other than the chemotherapy, he is receiving lansoprazole, acetaminophen, and an infusion of D5-- 0.9% normal saline at 50 mL/h. On examination, his BP is 98/60 and heart rate is irregular, between 40 and 50 bpm. His physical examination shows a middle-aged male in no acute distress. His cardiac examination is unremarkable, his lungs show bibasilar crackles, and the abdominal examination is positive for a palpable spleen tip without any hepatomegaly or abdominal tenderness. He has trace bilateral ankle edema. His distal pulses are irregular. The neurologic examination was unremarkable. His laboratory (serum sample) results are as follows

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Phosphate	4.4	8.3	
Calcium	9.0	7.5	
Uric acid		6.5	15.3
Lactate dehydrogenase (LDH)	285	994	

Which of the following would be a part of the IMMEDIATE treatment strategy in this patient?

A. atropine 1 mg IV

B. calcium chloride, given IV

C. 50 g of Kayexalate, given orally

D. 10 units of regular insulin, given subcutaneously

E. one ampule of glucagon, given IV

Answer: B

Question: 41
A 53-year-old White female, with a history of systemic lupus erythematosus (SLE), hypertension, and peripheral vascular disease, is admitted to the hospital for chest pain and dyspnea. Her cardiac enzymes were positive for acute MI. She subsequently undergoes a cardiac catheterization and stenting of the right coronary artery. Her postcardiac catheterization course is unremarkable, and she is discharged home 3 days later with adequate blood pressure control. Five days later, she is brought to the ER by her husband for abdominal pain and nausea. Her medications consist of aspirin, metoprolol, and prednisone. On physical examination, her blood pressure is 190/95 and her heart rate is 85 bpm. In general, she appears nauseated but is in no acute distress. Her cardiac examination reveals a regular rate and rhythm without murmur or rub.
Her lung fields are clear bilaterally. The abdominal examination is positive for diffuse discomfort, without guarding or rebound, and normoactive bowel sounds; her stool is positive for occult blood. Her lower extremities have trace edema bilaterally with 2+ distal pulses; moreover, she has a reddish-blue discoloration on both her lower extremities. You retrieve her records from

prior hospitalization. The patient's laboratory results are as follows:

Blood	5 Days prior	Now	Urine
Sodium	140	135	
Potassium	4.4	5.2	Na^+: 35
Chloride	106	113	Creatinine: 45
CO_2	24	20	Specific gravity: 1.012
BUN	15	52	Protein: trace
Creatinine	1.6	3.5	RBCs: 1–3
Glucose	80	115	WBCs: 10–12
Uric acid	6.0	5.8	+ Eosinophils
Amylase	90	205	No cellular casts
WBC	8000	12,000	
Hgb	13.5	12.1	
Platelets (PLT)	400,000	370,000	
% Eosinophils	1%	15%	

What is the most likely cause of this patient's acute renal failure?

A. contrast nephropathy from cardiac catheterization

B. acute interstitial nephritis

C. prerenal etiology from occult gastrointestinal (GI) bleeding

D. atheroembolic disease

E. lupus nephritis flare

Answer: D

Question: 42
A 53-year-old White female, with a history of systemic lupus erythematosus (SLE), hypertension, and peripheral vascular disease, is admitted to the hospital for chest pain and dyspnea. Her cardiac enzymes were positive for acute MI. She subsequently undergoes a cardiac catheterization and stenting of the right coronary artery. Her postcardiac catheterization course is unremarkable, and she is discharged home 3 days later with adequate blood pressure control. Five days later, she is brought to the ER by her husband for abdominal pain and nausea. Her medications consist of aspirin, metoprolol, and prednisone. On physical examination, her blood pressure is 190/95 and her heart rate is 85 bpm. In general, she appears nauseated but is in no acute distress. Her cardiac examination reveals a regular rate and rhythm without murmur or rub.
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Uric acid	6.0	5.8	+ Eosinophils
Amylase	90	205	No cellular casts
WBC	8000	12,000	
Hgb	13.5	12.1	
Platelets (PLT)	400,000	370,000	
% Eosinophils	1%	15%	

Which of the following tests is helpful in distinguishing volume depletion as a possible cause of acute renal failure?

A. kidney ultrasound

B. calculation of the fractional excretion of sodium

C. estimation of the glomerular filtration rate

D. examination of the urine sediment under microscopy

E. calculation of the anion gap

Answer: B

Question: 43
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Uric acid	6.0	5.8	+ Eosinophils
Amylase	90	205	No cellular casts
WBC	8000	12,000	
Hgb	13.5	12.1	
Platelets (PLT)	400,000	370,000	
% Eosinophils	1%	15%	

Which of the following is the optimal therapeutic agent for this patient's pain management?

A. intravenous Demerol

B. intramuscular ketorolac

C. oral indomethacin

D. intravenous morphine sulfate

E. ibuprofen 400 mg orally three times daily as needed

Answer: D

Question: 44
A 63-year-old Native American male, with a 6-year history of DM, hypertension, and hyperlipidemia, comes to your office as a new patient for a routine examination. He has been experiencing frequent lower back pain and headaches for which he is taking ibuprofen daily for the past 5 weeks. Moreover, he is complaining of mild fatigue. In addition, he is taking aspirin, atorvastatin, verapamil, and glipizide. His physical examination shows a blood pressure of 165/80 and heart rate of 90 bpm. In general, he was not in any distress. His funduscopic examination reveals no signs of diabetic retinopathy. Cardiac examination reveals a regular rate and rhythm with an S4 gallop. His lungs are clear and abdominal examination is unremarkable without any bruit auscultated. He also has 2+ lower extremity pitting edema. Rectal examination reveals brown stool, negative for occult blood. His laboratory results are as follows: