Pharmacotherapy Principles & Practice
Fourth Edition TESTBANK/STUDYGUIDE

CHAPTER 1. Introduction

1. What is the name under which a drug is listed by the U.S. Food and Drug Administration (FDA)?

a. Brand

b. Nonproprietary

c. Official

d. Trademark

2. Which source contains information specific to nutritional supplements?

a. *USP Dictionary of USAN & International Drug Names*

b. *Natural Medicines Comprehensive Database*

c. *United States Pharmacopoeia/National Formulary (USP NF)*

d. *Drug Interaction Facts*

3. What is the most comprehensive reference available to research a drug interaction?

a. *Drug Facts and Comparisons*

b. *Drug Interaction Facts*

c. *Handbook on Injectable Drugs*

d. *MartindaleThe Complete Drug Reference*

4. The physician has written an order for a drug with which the nurse is unfamiliar. Which section of the*Physicians Desk Reference (PDR)* is most helpful to get information about this drug?

a. Manufacturers section

b. Brand and Generic Name section

c. Product Category section

d. Product Information section

5. Which online drug reference makes available to health care providers and the public a standard, comprehensive, up to date look up and downloadable resource about medicines?

a. *American Drug Index*

b. *American Hospital Formulary*

c. DailyMed

d. *Physicians Desk Reference (PDR)*

6. Which legislation authorizes the FDA to determine the safety of a drug before its marketing?

a. Federal Food, Drug, and Cosmetic Act (1938)

b. Durham Humphrey Amendment (1952)

c. Controlled Substances Act (1970)

d. Kefauver Harris Drug Amendment (1962)

7. Meperidine (Demerol) is a narcotic with a high potential for physical and psychological dependency. Under which classification does this drug fall?

a. I

b. II

c. III

d. IV

8. What would the FDA do to expedite drug development and approval for an outbreak of smallpox, for which there is no known treatment?

a. List smallpox as a health orphan disease.

b. Omit the preclinical research phase.

c. Extend the clinical research phase.

d. Fast track the investigational drug.

9. Which statement is true about over the counter (OTC) drugs?

a. They are not listed in the *USP NF*.

b. A prescription from a health care provider is needed.

c. They are sold without a prescription.

d. They are known only by their brand names.

10. Which is the most authoritative reference for medications that are injected?

a. *Physicians Desk Reference*

b. *Handbook on Injectable Drugs*

c. DailyMed

d. *Handbook of Nonprescription Drugs*

11. The nurse is administering Lomotil, a Schedule V drug. Which statement is true about this drugs classification?

a. Abuse potential for this drug is low.

b. Psychological dependency is likely.

c. There is a high potential for abuse.

d. This drug is not a controlled substance.

12. The nurse is transcribing new orders written for a patient with a substance abuse history. Choose the medication ordered that has the greatest risk for abuse.

a. Lomotil

b. Diazepam

c. Phenobarbital

d. Lortab

13. The nurse is caring for a patient newly diagnosed with type 1 diabetes mellitus. Which approach(es) to therapeutic methods would be considered in this patients treatment? *(Select all that apply.)*

a. Therapeutic drugs

b. Concentrated carbohydrate diet

c. Family centered care

d. Regular daily exercise and activity

e. Daily baths

14. An older adult experiencing shortness of breath is brought to the hospital by her daughter. While obtaining the medication history from the patient and her daughter, the nurse discovers that neither has a list of the patients current medications or prescriptions. All the patient has is a weekly pill dispenser that contains four different pills. The prescriptions are filled through the local pharmacy. Which resource(s) would be appropriate to use in determining the medication names and doses? *(Select all that apply.)*

a. *MartindaleThe Complete Drug Reference*

b. *Physicians Desk Reference,* Section 4

c. Senior citizens center

d. Patients home pharmacy

15. The nurse planning patient teaching regarding drug names would include which statement(s)? *(Select all that apply.)*

a. Most drug companies place their products on the market under generic names.

b. The official name is the name under which the drug is listed by the U.S. Food and Drug Administration (FDA).

c. Brand names are easier to pronounce, spell, and remember.

d. The first letter of the generic name is not capitalized.

e. The chemical name is most meaningful to the patient.

16. When categorizing, the nurse is aware that which drug(s) would be considered Schedule II? *(Select all that apply.)*

a. Marijuana

b. Percodan

c. Amphetamines

d. Fiorinal

e. Flurazepam

Answers

1. C
2. C

3. B
4. B
5. C
6. A
7. B
8. D
9. C
10. B
11. A
12. D
13. A,B,D
14. B,D
15. B,C,D
16.B,C

CHAPTER 2. GERIATRICS

1. The following is an accurate description of the aging population:
A. The number of older adults will reach 17 million in 2030
B. The ratio of women to men will no longer exist
C. The surviving baby boomers will be more racially diverse than previous elders
D. The surviving baby boomers will have less financial resources than previous elders
E. The minority elder populations are projected to decrease in 2020

2. Education and health literacy in the older Americans can be described as:
A. In 2007, 62% of Hispanic elders had high school degrees
B. Nearly 20% of people 75 years and older have low health literacy
C. In 2007, 62% of black elders had high school degrees
D. Nearly 40% of people 75 years and older have low health literacy
E. None of the above

3. Following are common chronic conditions older Americans have:
A. Diabetes, hypertension, cancer
B. Hypertension, Alzheimer disease, Parkinson disease
C. Asthma, stroke, hypothyroidism
D. Chronic lower respiratory diseases, Alzheimer disease, stroke
E. Cancer, heart disease, Parkinson disease

4. The most important pharmacokinetic change that occurs with aging is:
A. Reduced renal function
B. Delayed gastric emptying
C. Increased conjugation
D. Phase II hepatic metabolism
E. Deconditioning

5. All of the following are incorporated into the Cockcroft–Gault equation except:
A. Age
B. Gender
C. Serum albumin
D. Serum creatinine
E. Weight

6. Because of pharmacodynamic changes, older adults have increased sensitivity to:
A. Acetaminophen
B. Metformin
C. Aspirin
D. Morphine
E. Cyanocobalamin

7. Polypharmacy use in older adults does not result in:
A. Increased adherence
B. Increased drug–drug interaction
C. Increased complex regimen
D. Increased hospitalization
E. Increased health care cost

8. According to the 2012 Beers criteria, the following drug should be avoided in older adults:

A. Diazepam
B. Warfarin
C. Aspirin
D. Pravastatin
E. Mirtazapine
9. The following statement about pain in older adults is true:
A. Older adults do not feel as much pain as younger adults.
B. Older adults experience less addiction when using opioids for nerve pain.
C. Pain is not a quality indicator in long-term care facilities because it is not an objective measure.
D. Pain is frequently undertreated and underreported in elders.
E. Elders are more comfortable with opioid use because they are closer to end of life.
10. The predictors of adverse drug reactions include the following except:
A. More than four medications
B. Longer than 14 days of hospital stay
C. More than four active medical problems
D. Smoking history
E. History of alcohol use
11. Medication nonadherence among older adults is influenced by:
A. More than two prescribers
B. Four or more medication changes in past 12 months
C. History of more than two surgeries
D. Having no caregiver help
E. More than two chronic conditions for at least 10 years
12. Anticoagulation therapy in older adults:
A. has proven benefit in atrial fibrillation
B. should be withheld due to bleeding side effects
C. should be withheld due to fall risks
D. is more beneficial in the very sick
E. is less beneficial in the community-dwelling ambulatory patient
13. Geriatric assessment:
A. should only be performed by a board-certified geriatrician
B. is an interprofessional collaborative process
C. routinely includes a formal driving evaluation by occupational therapy
D. includes history taking from the patient alone without family for maximum privacy
E. is usually done at the hospital during an acute admission
14. Quality indicators:
A. monitor costs related to pressure ulcer formation in long-term care facilities
B. are used to measure the environmental quality of outpatient geriatric clinics
C. do not include subjective complaints such as pain
D. focus on physical health issues and do not include mental health issues
E. are used by facility administrators and government overseers to identify problem areas
15. The following statement about pharmacotherapy in older adults is false:
A. Renal function needs to be monitored for patients on digoxin.

B. Beers criteria indicate inappropriate medications.
C. Benzodiazepines may cause significant adverse effects.
D. Albumin needs to be monitored for patients on phenytoin.
E. Drug monitoring is often unnecessary due to multimorbidity.

Answers

1. C
2. D
3. A
4. A
5. C
6. D
7. A
8. A
9. D
10. D
11. B
12. A
13. B
14. E
15. E

CHAPTER 3. PEDIATRICS

1. AJ is a 14-day-old premature male infant, born at 30-week GA, started on ampicillin and gentamicin for neonatal sepsis. Which pharmacokinetic parameter affects the patient's dosing frequency of gentamicin?
A. Absorption
B. Protein binding
C. Metabolism—Phase I reactions
D. Metabolism—Phase II reactions
E. Elimination half-life

2. Which is an appropriate maintenance fluid requirement for a 4-year-old boy with a weight of 40 pounds?
A. ~1400 mL/day
B. ~1600 mL/day
C. ~1800 mL/day
D. ~2000 mL/day
E. ~2200 mL/day

3. MM is a 6-month-old male infant who was born at 34-week GA. You are asked to evaluate his renal function in preparation for starting intravenous antibiotics. Which method for assessment is most appropriate?
A. "Bedside" Schwartz equation
B. Cockcroft–Gault equation
C. Schwartz (original) equation
D. Modification of diet in renal disease (MDRD) equation
E. Urine output alone

4. PG, a 1-week-old, 2.5-kg girl born at 30-week GA, is to be started on gentamicin for suspected neonatal sepsis. Which of the following is true regarding PG's apparent volume of distribution (Vd) in milliliters per kilogram for gentamicin compared with adults and children with normal renal function?
A. Vd will be less than those used in adults and children.
B. Vd will be greater than those used in adults and children.
C. Vd will be less than those used in adults but similar to children.
D. Vd will be greater than those used in adults but less than in children.
E. Vd will be the same as adults and children.

5. NC is a 5-year-old boy who is to start carbamazepine, an antiepileptic medication, for seizure disorder. Which pharmacokinetic parameter affects his daily dose requirement of carbamazepine, by body weight?
A. Absorption
B. Distribution
C. Metabolism—Phase I reactions
D. Metabolism—Phase II reactions
E. Elimination

6. Which of the following is not an appropriate treatment of cold symptoms in a 1-year-old child?
A. Adequate oral fluid intake
B. Dextromethorphan cough syrup
C. Honey (orally)

D. Ibuprofen every 8 hours as needed for fever
E. Saline nasal spray as needed
7. KC is a 3-week-old male infant born at 37-week GA with a urinary tract infection (UTI). Which age-dependent factor hinders the use of ceftriaxone for KC's UTI?
A. Gastric pH
B. Glomerular filtration rate
C. Intrapulmonary circulation
D. Serum albumin
E. Total body water
8. What is the estimated creatinine clearance for a 2-month-old term male infant whose weight is 4.5 kg, length 23.6 in (60 cm), and serum creatinine 0.5 mg/dL (or 44 µmol/L)?
A. 16 mL/min/1.73 m2
B. 21 mL/min/1.73 m2
C. 39 mL/min/1.73 m2
D. 54 mL/min/1.73 m2
E. 66 mL/min/1.73 m2
9. In the outpatient setting, which of the following is not a feasible factor to consider when assessing for potential illness in an infant?
A. Behavior such as lethargy and irritability
B. Body temperature
C. Diaper changes (urine output)
D. Oral intake
E. Mean arterial pressure
10. Which of the following items would be least appropriate to mix to mask the taste of medication for a 10-month-old infant?
A. Applesauce
B. Chocolate syrup
C. Honey
D. Pear puree
E. Strawberry gelatin
11. Which patient is at greatest risk for a medication error?
A. A 2-year-old girl (12 kg) who is started on amoxicillin suspension with dose rounded within 10% to meet a measurable volume.
B. A 3-day-old boy (2.8 kg) who is on a low concentration heparin drip to maintain his umbilical arterial catheter.
C. A 7-day-old premature female infant (1.5 kg) who is receiving gentamicin doses using a smart pump for infusion.
D. A 10-year-old girl (55 lb [24.9 kg]) started on an insulin drip for diabetic ketoacidosis.
E. A 12-year-old boy (34 kg) started on started on oxycodone for acute pain after surgery.
12. KT, an 18-month-old girl, swallowed some of her grandfather's medications from his weekly pillbox. KT's grandfather states that he is taking medications for blood pressure, sleep, and high cholesterol. He states that "she is a little

sleepy and not behaving like herself right now." Which is the most appropriate action to manage the accidental ingestion for this child?

A. Administer ipecac syrup immediately and induce emesis until paramedics arrive

B. Allow KT to "sleep off" the medication and contact her pediatrician tomorrow

C. Direct her family to take KT to the emergency department and contact local/regional poison control center

D. Give continuous oral fluids to dilute the medication's effects

E. Monitor the child's blood pressure at home and go to the emergency department if it is too low

13. Which is false about medication use in pediatric patients?

A. Caregivers should be educated about measurement of liquid medication for each medication.

B. It is appropriate to recommend a tablet formulation for any child of age 5 years and younger.

C. Obtaining a child's medication history should include prescription, over-the-counter, and complementary medications.

D. Suspendability, stability, uniformity, and palatability are important factors to consider when compounding a liquid formulation.

E. When using intravenous formulations, fluid status and comorbidities like congenital heart disease should be considered.

14. Which statement is false regarding complementary and alternative medicine (CAM) use in the pediatric population?

A. CAM is routinely disclosed in medication histories from parents/caregivers.

B. Common illnesses in which CAM may be used include cancer, asthma, and autism spectrum disorder.

C. Discussion of CAM use should be encouraged with parents/caregivers.

D. Drug interactions are possible with CAM use.

E. There are limited data regarding the use of ginger and echinacea in children.

15. Which statement is false regarding off-label use of medications:

A. It includes use of a medication outside the licensed age range.

B. It is not permitted by law in the pediatric population due to lack of data.

C. It is based on limited data about the use in infants and children.

D. It is used in situations where there is no appropriate pediatric-approved alternative.

E. It includes dosing outside of those recommended by the manufacturer's package insert.

Answers

1. E
2. A
3. C
4. B

5. C
6. B
7. D
8. D
9. E
10. C
11. D
12. C
13. B
14. A
15. B

CHAPTER 4. PALLIATIVE CARE

1. JP is being treated for lung cancer, and received his last chemotherapy infusion 3 weeks ago. He is currently reporting nausea and vomiting since he started taking morphine for his cancer-related pain. Which of the following antiemetics would be the best option to treat his uncontrolled nausea and vomiting?

A. Ondansetron
B. Aprepitant
C. Lorazepam
D. Haloperidol
E. Dolasetron

2. A patient diagnosed with advanced COPD is reporting dyspnea associated with thickened pulmonary secretions. The patient has a strong cough reflex and is adequately hydrated. Which of the following is the best option for this patient?

A. Oxygen therapy
B. Low-dose oral morphine
C. Scopolamine patches
D. Nebulized saline
E. Lorazepam

3. Delirium often presents gradually, with persistent decline in memory and global functioning.

A. True
B. False

4. In a patient diagnosed with advanced heart failure, who is demonstrating excessive fluid overload symptoms, which of the following medication should be reduced or discontinued?

A. Digoxin
B. Beta-adrenergic blocker
C. Angiotensin-converting enzyme (ACE) inhibitor
D. Loop diuretic
E. Aspirin

5. Nausea secondary to gastroparesis is most appropriately treated by which of the following agents?

A. Lorazepam
B. Haloperidol
C. Metoclopramide
D. Ondansteron
E. Dolasteron

6. Which of the following adjuvant is often used in conjunction with standard opioid therapy for the treatment of severe bone pain?

A. Acetaminophen
B. Corticosteroids
C. Lorazepam
D. Tricyclic antidepressants
E. Alprazolam

7. Which of the following best describes the cause of death in patients diagnosed with

Lou Gehrig disease?
A. Opportunistic infections
D. Anorexia
E. Renal failure
8. A patient is eligible for the hospice Medicare benefit in the United States if they have a terminal diagnosis with of prognosis of less than:
A. 1 month if the disease runs its usual course
B. 3 months if the disease runs its usual course
C. 6 months if the disease runs its usual course
D. 12 months if the disease runs its usual course
E. None of the above
9. Palliative care is considered appropriate care for which of the following:
A. Breast cancer
B. Chronic heart failure
C. Alzheimer disease
D. AIDS
E. All of the above
10. Benzodiazepine as monotherapy in patients with delirium is the treatment of choice.
A. True
B. False
11. The dose of short-acting opioids for the treatment of breakthrough pain should be equal to:
A. 1%–2% of the daily maintenance dose
B. 5%–20% of the daily maintenance dose
C. 25%–35% of the daily maintenance dose
D. Short-acting opioids should never be used in palliative care
12. Low-dose opioids may be effective in treating which of the following:
A. Nausea
B. Vomiting
C. Dyspnea
D. Terminal secretions
13. Due to questionable necessity of simvastatin therapy in hospice patients, this medication should be evaluated for discontinuation in end of life care.
A. True
B. False
14. Which of the following agent(s) may be given sublingually?
A. Lorazepam
B. Haloperidol
C. Atropine
D. All of the above
15. Methadone may be used to effectively manage which of the following?
A. Neuropathic pain
B. Visceral pain
C. Bone pain
D. All of the above

Answers

1. D
2. D
3. B
4. B
5. C
6. B
7. B
8. C
9. E
10. False
11. B
12. C
13. A
14. D
15. D

CHAPTER 5. HYPERTENSION

1. A 55-year-old white man with seated office blood pressure (BP) readings of 144/92 mm Hg and 136/84 mm Hg is asked to return in 2 weeks for repeat measurements, which are 138/88 mm Hg and 134/82 mm Hg. Which of the following classifies DG's BP per the American Society of Hypertension (ASH) and the International Society of Hypertension (ISH) joint Clinical Practice Guidelines for the Management of Hypertension in the Community?

A. Isolated systolic hypertension
B. Stage 1 hypertension
C. Prehypertension
D. Optimal BP
E. Stage 2 hypertension

2. Lupus-like syndrome is a possible side effect of which of the following drug(s)?

A. Clonidine
B. Minoxidil
C. Doxazosin
D. Hydralazine
E. Reserpine

3. A 55-year-old black woman has a history of left ventricular hypertrophy with a left ventricular ejection fraction of 55%. She has had hypertension for 10 years and is currently taking chlorthalidone 25 mg daily, metoprolol succinate 50 mg daily, and amlodipine 2.5 mg daily. Her averaged BP is 152/94 mm Hg with a heart rate of 54 beats/min. Her physical exam is unremarkable and basic metabolic panel reveals serum creatinine of 0.8 mg/dL [71 µmol/L] and potassium of 3.9 mEq/L (3.9 mmol/L). She reports allergies to fosinopril and aspirin. Which of the following represents the optimal course of action?

A. Increase amlodipine to 5 mg and have her take it at bedtime
B. Increase metoprolol succinate to 100 mg daily
C. Add lisinopril 5 mg daily
D. Add spironolactone 50 mg daily
E. A or B

4. A 34-year-old black man presents to your clinic with a BP of 160/94 mm Hg. Repeat readings over the next 2 weeks average 156/92 mm Hg. The patient has no past medical history with the exception of Crohn disease, which is currently treated with chronic steroid therapy. He is also taking an over-the-counter NSAID for ongoing back pain. Physical examination and laboratory tests are unremarkable. Appropriate interventions at this time include:

A. No intervention because patient most likely has drug-induced hypertension
B. Discontinuation of the NSAID
C. Reassessment of the dose and need for long-ter

5. A 68-year-old white man has resistant hypertension, prior myocardial infarction, and chronic kidney disease (CKD; serum creatinine 1.8 mg/dL [159 µmol/L], estimated creatinine clearance 40 mL/min [0.67 mL/s]). You are initiating ramipril today. What is the most appropriate timeframe for laboratory follow-up?

A. 1 to 2 days
B. 1 to 2 weeks

C. 1 to 2 months
D. 3 to 4 months
E. 4 to 6 months
6. A 47-year-old Hispanic man has primary hypertension with an average BP of 172/98 mm Hg and heart rate of 70 beats/min. His most recent serum potassium is 4.5 mEq/L (4.5 mmol/L), serum creatinine is 1.1 mg/dL (97 µmol/L) and calculated creatinine clearance is 102 mL/min (1.70 mL/s). Which of the following antihypertensives would be most appropriate at this time?
A. Furosemide
B. Atenolol
C. Chlorthalidone and lisinopril initiated concurrently
D. Amlodipine and lisinopril initiated concurrently
E. C or D
7. A 67-year-old Asian man with a recent non-ST segment elevation MI (2 weeks ago) has an average BP of 148/86 mm Hg and a heart rate of 76 beats/min. Which of the following antihypertensive agents is preferred in this setting?
A. Metoprolol tartrate
B. Acebutolol
C. Hydrochlorothiazide
D. Spironolactone
E. A or B
8. Which of the following treatments is (are) the most appropriate for a hypertensive emergency?
A. Normalization of BP within hours
B. Reduction in mean arterial pressure by 25% to 50% within minutes to hours
C. Reduction in mean arterial pressure up to 25% within minutes to hours
D. Administration of sublingual nifedipine
E. C and D
9. A 65-year-old black man with history of hypertension, prior MI, and benign prostatic hypertrophy, is currently receiving amlodipine 5 mg QAM and metoprolol succinate 50 mg once daily. He has an average 24-hour Ambulatory Blood Pressure of 156/92 mm Hg and HR of 66 beats/min with notable nocturnal hypertension. He complains of nocturia but states that the swelling in his feet improved when his amlodipine dose was reduced. Which of the following presents the most clinically appropriate course of action?
A. Initiate tamsulosin 0.4 mg daily at bedtime
B. Increase amlodipine to 10 mg daily and change to bedtime
C. Increase metoprolol succinate to 50 mg twice daily
D. Initiate chlorthalidone 50 mg daily at bedtime
E. Initiate doxazosin 2 mg daily at bedtime
10. A 67-year-old black man has resistant hypertension. Past medical history is also significant for heart failure with left ventricular systolic dysfunction, dyslipidemia, and peripheral vascular disease. Medications currently include lisinopril, carvedilol, and furosemide. Current blood pressure is 146/88 mm Hg and when repeated 148/82 mm Hg. Which of the following additions to his medication regimen would be an inappropriate choice at this time?

A. Amlodipine
B. Felodipine
C. Hydralazine/Isosorbide Dinitrate
D. Minoxidil
E. Spironolactone

11. A 32-year-old woman is 20 weeks pregnant and has a history of gestational diabetes. She presents with an average BP of 154/96 mm Hg and a heart rate of 60 beats/min. Her laboratory results are remarkable for proteinuria, elevated serum uric acid, and low potassium. Which of the following presents the most appropriate course of action?
A. Closely monitor her BP and provide supportive care
B. Start Losartan 50 mg daily while monitoring BP
C. Start methyldopa 250 mg every 6 hours while monitoring BP
D. Start labetalol 100 mg every 12 hours while monitoring BP
E. Start chlorthalidone 25 mg daily while monitoring BP

12. A 45-year-old black man has a past medical history significant only for hypertension. Despite therapy with lisinopril 40 mg daily, hydrochlorothiazide 12.5 mg daily, and amlodipine 10 mg daily, his home and office BPs over the last 2 weeks remain elevated with an average reading of 154/92 mm Hg. All laboratory results are within normal limits. Which of the following would be a reasonable change to his antihypertensive regimen?
A. Replace hydrochlorothiazide with chlorthalidone 25 mg daily
B. Add aliskiren 150 mg daily
C. Add spironolactone 50 mg daily
D. Add losartan 25 mg daily
E. B or D

13. A 29-year-old woman has had stage 1 hypertension for the past 2 years that has been well controlled (BP range of 100–110/60–65 mm Hg) on lisinopril 10 mg once daily. She has successfully implemented lifestyle modifications, losing 14 kg (31 lb) and obtaining a body mass index of 21 kg/m2
. She informs you she is going to start
trying to get pregnant. What changes should be instituted with her antihypertensive therapy at this time?
A. Discontinuing lisinopril and monitoring BP closely with lifestyle modifications
B. Discontinuing lisinopril and initiating methyldopa
C. Continuing lisinopril because her BP is well controlled
D. Reducing lisinopril dose to 2.5 mg daily and maintaining lifestyle modifications
E. Discontinuing lisinopril and starting HCTZ

14. A 57-year-old white woman has type 2 diabetes, morbid obesity, and hypertension. She is currently taking only lisinopril 20 mg daily and her office blood pressures are consistently at goal < 140/90 mm Hg, but her home readings are significantly higher. Which of the following is a possible explanation for her elevated home readings?
A. Her home BP cuff is too small
B. She has white coat hypertension
C. Her home BP cuff is too large

D. She checks her blood pressure immediately after exercise
E. All of the above
15. A 56-year-old black woman is currently on verapamil ER 360 mg once daily. She has a past medical history of hypertension and atrial fibrillation. Today, her office BP readings are 137/97 mm Hg and 144/96 mm Hg with a heart rate of 60 beats/min. Which of the following is the most appropriate intervention?
A. Add amlodipine 5 mg daily
B. Increase verapamil ER to 360 mg twice daily
C. Add chlorthalidone 12.5 mg daily
D. Add lisinopril 5 mg daily
E. Either C or D

ANSWERS

1. C
2. D
3. A
4. E
5. B
6. E
7. A
8. C
9. E
10. D
11. C
12. A
13. A
14. A
15. E

CHAPTER 6. HEART FAILURE

1. Which of the following finding, when reduced, indicates impaired systolic function in a patient with heart failure?

A. BNP
B. SCr
C. LVEF
D. LVH
E. Troponin

2. What is the most common etiology of heart failure?

A. Ischemic
B. Idiopathic, unknown cause
C. Viral cardiomyopathy
D. Drug-induced
E. Hypertension

Use the following to answer questions 3–5:

A 58-year-old man presents to the clinic today with complaints of increasing shortness of breath while dressing and carrying groceries and a 10 lb (4.5 kg) weight gain. A few months prior, he noticed episodes of waking in the middle of the night with shortness of breath, difficulty breathing after walking two flights of stairs, as well as ankle edema. The patient has a history of osteoarthritis × 10 years, hypertension × 4 years, diabetes mellitus × 5 years, dyslipidemia, and is status post myocardial infarction 2 years ago.

Physical exam reveals the following: BP 148/96 mmHg, pulse 98 beats/min, Ht: 5’11’’ (180 cm), Wt: 189 lb (86 kg; usual = 178 lb [

(+) JVD, (−) HJR or hepatomegaly
(+) S3, (+) S4
ECG: regular rate/rhythm, evidence of old infarct
ECHO: EF 33% (0.33)
CXR: Crackles bilaterally and cardiomegaly (enlarged heart)
Labs:
Sodium: 142 mE/L (142 mmol/L)
Potassium: 3.7 mEq/L (3.7 mmol/L)
Magnesium: 1.8 mEq/L (0.90 mmol/L)
BUN: 22 mg/dL (7.9 mmol/L)
SCr: 1.3 mg/dL (115 µmol/L)
BNP: 322 pg/mL (322 ng/L; 93 pmol/L)
Current medications:
Aspirin 81 mg daily
Diltiazem 180 mg daily
Glipizide 10 mg twice daily for diabetes
Simvastatin 20 mg nightly at bedtime
Acetaminophen 500 mg twice daily

3. Which of the patient’s medications can exacerbate systolic dysfunction heart failure?

A. Glipizide
B. Diltiazem
C. Acetaminophen
D. b and c

E. All of the above
4. Which of the following is TRUE regarding the patient's current NYHA functional class and stage of heart failure?
A. Class III, Stage B
B. Class III, Stage C
C. Class II, Stage B
D. Class II, Stage C
E. Class IV, Stage C
5. Which of the following is the MOST appropriate ACUTE treatment plan for the patient's heart failure?
A. Add HCTZ 12.5 mg Qday, since creatinine clearance is above 30 mL/min (0.5 mL/s)
B. Add HCTZ 25 mg Qday, increase dose of diltiazem to 240 mg Qday
C. Add furosemide 20 mg BID and nesiritide infusion since BNP is elevated
D. Add furosemide 20 mg BID and lisinopril 10 mg Qday, discontinue diltiazem
E. Add furosemide 20 mg BID, and carvedilol 3.125 mg twice daily, discontinue diltiazem
6. What is the medical term for the symptom of "feels short of breath when she lies down at night"?
A. Orthopnea
B. Hepatojugular reflux
C. Paroxysmal nocturnal dyspnea
D. Pulmonary congestion
E. Peripheral edema
7. Which of the following is TRUE regarding ACE inhibitors in heart failure?
A. Should be used mainly in severe heart failure, NYHA functional class IV
B. Efficacy of ACE inhibitors is a class effect
C. May be used in place of hydralazine and isosorbide dinitrate in cases of renal dysfunction
D. Can be replaced by angiotensin receptor blockers if the patient has hyperkalemia
E. Should be discontinued if creatinine clearance decreases by more than 10%
8. Which of the following is TRUE regarding β-blockers in heart failure?
A. Ideally should be started in setting of congestion to aid in diuresis
B. FDA-approved agents include carvedilol and metoprolol succinate
C. Metoprolol tartrate is more efficacious than carvedilol for heart failure
D. Chronic β-blockade increases ventricular mass
E. Metoprolol has more potent blood pressure lowering effects compared to carvedilol
9. A 74-year-old woman presents to clinic for heart failure follow-up. She is classified as NYHA FC II. Her blood pressure is 144/82 mm Hg, and most recent EF is 26% (0.26). Her current medication regimen includes lisinopril 20 mg Qday, carvedilol 25 mg BID, digoxin 0.125 mg Qday, and furosemide 20 mg BID. Which of the following would be the BEST choice to add at this time?
A. Metolazone
B. Hydralazine and isosorbide
C. Spironolactone

D. Hydrochlorothiazide
E. Valsartan
10. Mineralocorticoid receptor antagonists (or aldosterone receptor antagonists) have been shown to reduce mortality in patients with heart failure. Which of the following is TRUE about MRAs?
A. Spironolactone leads more frequently to gynecomastia compared to eplerenone
B. Associated with hypokalemia
C. Can only be used in NYHA functional class IV
D. Used after maximizing ACE inhibitors, β-blockers, and digoxin
E. Added to loop diuretic when a patient is resistant to its effects to enhance removal of fluid
11. A 76-year-old man is admitted to the hospital presenting with peripheral and pulmonary edema, decreased urinary output, hypotension, and altered mental status. Pertinent values: PCWP = 32 mm Hg (4.3 kPa), Cardiac index (CI) = 1.8 L/min/m2
. Based on his
presentation, what hemodynamic subset is he in?
A. I
B. II
C. III
D. IV
E. II and IV
12. Which of the following diuretic combinations is used for the purpose of reducing congestion in the setting of diuretic resistance?
A. Hydrochlorothiazide and spironolactone
B. Spironolactone and torsemide
C. Furosemide and spironolactone
D. Furosemide and metolazone
E. Nesiritide and spironolactone
13. A 68-year-old African American woman is admitted to the hospital for new onset acute decompensated heart failure. Her current medications include felodipine 2.5 mg Qday and atorvastatin 20 mg Qday. Hemodynamic readings include a PCWP of 16 (2.1 kPa) and a CI of 1.8 L/min/m2
. Which of the following is the MOST appropriate treatment
plan?
A. Fluids, inotropes
B. Diuretics, vasodilators
C. Fluids, inotropes, vasodilators
D. Diuretics, fluids, inotropes
E. Diuretics, inotropes, vasodilators
14. Which of the following statements is most appropriate for patient counseling on nonpharmacologic management of heart failure?
A. Supervised exercise is recommended including aerobic activity and weight lifting
B. Contact health care provider if weight increases by more than 3 lb (1.4 kg) in a day or 5 lb (2.3 kg) in a week
C. Lower dietary sodium intake to no more than 2 grams per day
D. Maintain alcohol intake to no more than 2 drinks per day if diagnosed with

alcohol-induced cardiomyopathy
E. Weight should be kept at 15% above ideal body weight to maintain adequate nutrition absorption

15. A 68-year-old woman is admitted for decompensated heart failure, hemodynamic subset IV. Her current medication regimen includes enalapril 10 mg BID, digoxin 0.125 mg Qday, carvedilol 12.5 mg BID, furosemide 80 mg BID, and potassium chloride (K-Dur) 40 mEq (40 mmol) BID. Which of the following is TRUE regarding using milrinone therapy in this patient?
A. Milrinone can interact with her β-blocker therapy due to its β-agonist mechanism
B. Effects begin to wear off after 72 hours due to tolerance
C. Dose needs to be adjusted in renal dysfunction
D. Milrinone is not appropriate to use in subset IV
E. a and c

ANSWERS
1. C
2. A
3. B
4. B
5. D
6. A
7. B
8. B
9. C
10. A
11. D
12. D
13. A
14. B
15. C

CHAPTER 7. ISCHEMIC HEART DISEASE

1. A 50-year-old, nonsmoking woman has no significant past medical history. A physical exam and laboratory tests reveal the following: Height 5’4” (163 cm), weight 184 lb (83.6 kg), blood pressure 134/80 mm Hg, heart rate 70 beats/min, total cholesterol 184 mg/dL (4.76 mmol/L), LDL cholesterol 110 mg/dL (2.84 mmol/L), HDL cholesterol 46 mg/dL (1.19 mmol/L), and triglycerides 140 mg/dL (1.58 mmol/L). Which of the following are risk factors for IHD in this patient?

A. Age, hypertension, dyslipidemia
B. Obesity
C. Age, dyslipidemia
D. Obesity, hypertension
E. Hypertension, dyslipidemia

2. Which of the following is characteristic of an atherosclerotic lesion in a patient with chronic stable angina?

A. Thick fibrous cap
B. Thrombosis
C. Large lipid core
D. Plaque rupture
E. Platelet aggregation

3. A 47-year-old man has been prescribed sublingual nitroglycerin tablets for acute relief of angina symptoms. When counseling him on the proper use of sublingual nitroglycerin, which of the following statements is correct regarding when to call 9-1-1?

A. Call 9-1-1 if symptoms have not subsided 5 minutes after administration
B. Call 9-1-1 if symptoms have not subsided 30 minutes after administration
C. Call 9-1-1 prior to taking nitroglycerin
D. Take 1 tablet every 5 minutes as needed for a maximum of three doses; call 9-1-1 if symptoms remain 5 minutes after the third dose
E. Take one tablet every 8 to 12 hours; call 9-1-1 if dizziness occurs

4. A 65-year-old postmenopausal woman has a history of hypertension, dyslipidemia, and chronic stable angina. Her current medications are atenolol 50 mg PO daily, simvastatin 40 mg PO at bedtime, and SL nitroglycerin as needed. She has allergies/intolerances to aspirin (angioedema) and enalapril (cough). Which of the following should be added to her drug regimen to reduce her risk for cardiovascular events?

A. clopidogrel
B. dipyridamole
C. niacin
D. nifedipine
E. ticagrelor

5. A 45-year-old man diagnosed with hypertension, diabetes, and IHD was recently hospitalized for unstable angina. A coronary angiogram performed during hospitalization revealed single vessel disease not amenable to PCI. He is currently taking carvedilol 6.25 mg PO twice daily, lisinopril 10 mg PO daily, and metformin 500 mg PO twice daily. His blood pressure is 126/78 mm Hg and heart rate is 62 beats/min. A fasting lipid profile shows the following: LDL cholesterol 127 mg/dL (3.28 mmol/L), HDL cholesterol 36 mg/dL (0.93 mmol/L), and triglycerides 157 mg/dL (1.77 mmol/L). He is a current smoker. What additional therapy should be considered to treat this patient’s IHD and lower his risk of ischemic events?

A. Add low-intensity statin (eg, pravastatin 20 mg/day).
B. Add moderate-intensity statin (eg, lovastatin 40 mg/day)
C. Add high-intensity statin (eg, atorvastatin 80 mg/day)
D. Add prasugrel
E. Add varenicline

6. A 53-year-old woman with a history of hypertension and dyslipidemia undergoes a thorough cardiac workup for new onset chest tightness and shortness of breath on exertion. A cardiac catheterization shows no significant coronary artery obstruction. She is believed to have microvascular disease. Her blood pressure is 148/90 mm Hg and heart rate is 74 beats/min. Her current medications include benazepril 10 mg PO daily and simvastatin 40 mg PO hs. What is the most appropriate therapy to manage her angina symptoms?
A. Increase benazepril to 20 mg daily
B. Add metoprolol
C. Add aspirin
D. Add doxazosin
E. Add hydralazine

7. What is the recommended treatment duration of dual antiplatelet therapy following implantation of a drug eluting stent?
A. 1 week
B. 1 month
C. 3 months
D. 6 months
E. At least 12 months

8. A 60-year-old obese woman with hypertension and dyslipidemia is being started on ranolazine for microvascular angina. Her current medications include aspirin 81 mg/day, lisinopril 10 mg daily, metoprolol 50 mg twice daily, and simvastatin 40 mg/day. A fasting lipid profile reveals the following: LDL cholesterol 65 mg/dL (1.68 mmol/L), HDL cholesterol 54 mg/dL (1.40 mmol/L), and triglycerides 108 mg/dL (1.22 mmol/L). What changes, if any, should be made to her statin regimen?
A. Change to a low-intensity statin (eg, pravastatin 20 mg/day)
B. Change to a high-intensity statin (eg, rosuvastatin 20 mg/day.
C. Continue simvastatin 40 mg/day
D. Reduce the dose of simvastatin to 20 mg/day
E. Increase the dose of simvastatin to 80 mg/day

9. A 58-year-old woman with hypertension and coronary artery disease underwent percutaneous coronary intervention with placement of two drug eluting stents one week ago. Genotyping is done and reveals that she has the CYP2C19 poor metabolizer phenotype. Which of the following is the most appropriate antiplatelet therapy for this patient?
A. Clopidogrel plus aspirin
B. Clopidogrel plus prasugrel
C. Prasugrel plus aspirin
D. High dose aspirin
E. Dipyridamole plus aspirin

10. A 56-year-old woman was recently diagnosed with ischemic heart disease. Her current medications include conjugated estrogen 0.625 mg/day, fish oil 1 gm twice daily, aspirin 81 mg daily, atenolol 100 mg daily, lisinopril 20 mg daily, and rosuvastatin 20 mg daily. Which of the

following changes to the patient's regimen are appropriate?
A. Add clopidogrel
B. Add vitamin E
C. Change rosuvastatin to pravastatin
D. Discontinue conjugated estrogen
E. Discontinue fish oil
11. A 60-year-old man with a history of hypertension, diabetes, and dyslipidemia is being treated with lisinopril 10 mg PO daily, simvastatin 20 mg PO daily, and metformin XR PO 500 mg daily. His current blood pressure is 150/88 mm Hg and heart rate is 80 beats/min. He presents with complaints of chest pressure and shortness of breath occurring with exertion. He is diagnosed with variant angina. In addition to sublingual nitroglycerin, what is the most appropriate change to his drug therapy?
A. Add amlodipine
B. Add isosorbide mononitrate
C. Add metoprolol
D. Add ranolazine
E. Add thiazide diuretic (eg, chlorthalidone)
12. A 55-year-old man with a history of dyslipidemia and ischemic heart disease had a myocardial infarction 3 months ago. His current medications are aspirin 81 mg PO once daily, metoprolol XL 200 mg PO daily, simvastatin 40 mg PO at bedtime, and sublingual nitroglycerin as needed. He continues to experience occasional symptoms of angina with exertion. His blood pressure is 124/70 mm Hg, and his pulse is 60 beats/min. What is the most appropriate pharmacologic intervention?
A. Taper off metoprolol and start verapamil
B. Add isosorbide mononitrate
C. Taper off metoprolol and start nifedipine
D. Add diltiazem
E. Switch metoprolol to atenolol
13. A 63-year-old woman with a past medical history of dyslipidemia and chronic stable angina treated with aspirin 81 mg PO once daily, atenolol 100 mg PO once daily, simvastatin 40 mg PO once daily, and sublingual nitroglycerin as needed. Her angina symptoms are currently well controlled. Her blood pressure is 148/90 mm Hg, and her pulse is 70 beats/min. What is the most appropriate addition to therapy to improve the management of this patient's ischemic heart disease?
A. ramipril
B. isosorbide dinitrate
C. ranolazine
D. verapamil
E. bupropion
14. A 59-year-old man has a history of hypertension, dyslipidemia, ischemic heart disease, and pulmonary hypertension. He is currently taking aspirin 81 mg PO daily, atorvastatin 40 mg PO daily, ramipril 5 mg PO daily, metoprolol XL 100 mg PO daily, and sildenafil 20 mg PO thrice daily. His blood pressure is 102/76 mm Hg and heart rate is 60 beats/min. He continues to experience ischemic symptoms with minimal exertion. What is the most appropriate addition to therapy to improve the management of this patient's ischemic heart disease?
A. Add felodipine

B. Add isosorbide mononitrate
C. Add ranolazine
D. Decrease metoprolol XL to 50 mg daily
E. Increase metoprolol XL to 200 mg daily

15. A 68-year-old man with a history of hypertension, dyslipidemia, and chronic obstructive pulmonary disease was recently diagnosed with chronic stable angina. His current medications are chlorthalidone 25 mg PO daily, atorvastatin 40 mg PO at bedtime, salmeterol one inhalation every 12 hours, fluticasone MDI two puffs twice a day, and albuterol MDI one to two puffs every 4 hours prn. His vital signs are a heart rate of 86 beats/min and blood pressure of 150/90 mm Hg. In addition to sublingual nitroglycerin, what is the most appropriate change to his drug therapy?

A. Start propranolol
B. Start ranolazine
C. Start amlodipine
D. Start isosorbide mononitrate
E. Start verapamil

ANSWERS

1. B
2. A
3. A
4. A
5. C
6. B
7. E
8. D
9. C
10. D
11. A
12. B
13. A
14. C
15. E

CHAPTER 8. ACUTE CORONARY SYNDROMES

1. A 68-year-old man with a history of ischemic heart disease develops severe chest pain (8/10 on a pain scale) with subsequent ECG depression in leads II, III, and aVF. Serum creatinine is 1.0 mg/dL (88 µmol/L) and troponin I is 3.4 ng/mL (3.4 mcg/L; 3400 ng/L). Which of the following differentiates MI from UA in this patient?

A. Location of the coronary artery blockade
B. Quality of chest discomfort
C. Severity of coronary artery disease
D. Elevated plasma troponin concentration
E. ECG changes

2. A 76-year-old man with prior history of coronary artery disease, hypertension, hyperlipidemia and stroke is found
to have STEMI and receives a DES. Which dual antiplatelet regimen is most appropriate for him to receive at time
of discharge?

A. Aspirin 325 mg and clopidogrel 75 mg daily
B. Aspirin 325 mg and ticagrelor 90 mg twice daily
C. Aspirin 325 mg and prasugrel 10 mg daily
D. Aspirin 81 mg and prasugrel 10 mg daily
E. Aspirin 81 mg and ticagrelor 90 mg twice daily

3. An 82-year-old man with STEMI was brought by ambulance to a small community hospital during nighttime (offpeak) hours. The nearest hospital with operating catheterization facilities is a 2.5-hour distance away. Which of the
following addresses the appropriate reperfusion for this patient?

A. Fibrinolytic therapy
B. An early invasive strategy
C. A delayed invasive strategy
D. An ischemia-guided approach
E. A percutaneous strategy

4. A 54-year-old woman with a CrCl of 20 ml/min (0.33 mL/s) is being treated for ACS by utilizing an ischemiaguided strategy. In addition to aspirin 81 mg daily, which of the following medication combinations is most
appropriate in this patient?

A. Clopidogrel, UFH, abciximab
B Ticagrelor, enoxaparin, eptifibatide
C. Prasugrel, fondaparinux
D. Ticagrelor, UFH
E. Clopidogrel, bivalirudin, tirofiban

5. A 62-kg (137-lb) man with CrCl of 55 mL/min (0.92 mL/s) is found to have a NSTE-ACS. Troponin levels,
drawn at three separate intervals, are all negative. Which of the following is the preferred antithrombotic regimen,
in addition to ASA and clopidogrel if an ischemia-guided strategy is chosen?

A. UFH infusion and eptifibatide IV infusion 2 mcg/kg/min
B. Enoxaparin 60-mg SC twice daily
C. Bivalirudin bolus plus infusion

D. Fondaparinux 2.5 mg SC twice daily
E. Bivalirudin bolus plus eptifibatide IV infusion 2 mcg/kg/min
6. A 45-year-old patient with STEMI presents to a hospital without the capacity to perform primary PCI. It has been
2 hours since the onset of chest discomfort with BP
mcg/L; 10,800 ng/L). In addition to ASA and IV NTG which early therapy option would be best to start within the
first 24 hours to treat symptoms, and prevent long term complications?
A. Clopidogrel, enoxaparin, ramipril, reteplase
B. Clopidogrel, enoxaparin, tenecteplase
C. Reteplase, UFH, metoprolol, enalapril
D. Tenecteplase, bivalirudin, metoprolol
E. Alteplase, bivalirudin, lisinopril
7. Which of the following is a contraindication to eplerenone in a patient with heart failure following MI?
A. EF less than 40% (0.40)
B. Persistent angina
C. Angioedema to an ACE inhibitor
D. Serum potassium of 5.6 mEq/L (5.6 mmol/L)
E. Heart rate less than 60 beats/min
8. Which of the following represents the most appropriate antiplatelet regimen in a 55-year-old patient (weight 70
kg [154 lb]) administered tenecteplase 2 hours previously for STEMI?
A. 600-mg clopidogrel loading dose, followed by 75 mg daily
B. 300-mg clopidogrel loading dose, followed by 75 mg daily
C. No clopidogrel load, followed by 75 mg daily
D. 60-mg prasugrel loading dose, followed by 5 mg daily
E. 60-mg prasugrel loading dose, followed by 10 mg daily
9. Which of the following patients is most likely to receive the most benefit from a GPI?
A. A 47-year-old diabetic man with STEMI undergoing primary PCI receiving ticagrelor
B A 68-year-old man with NSTE-ACS undergoing PCI receiving bivalirudin and prasugrel
C. A 60-year-old woman with negative troponins, receiving clopidogrel
D. An 82-year-old man with positive troponins, receiving ticagrelor
E. A 53-year-old woman with positive troponins, receiving heparin
10. Which of the following anticoagulants is preferred for PCI in a patient with a history of heparin-induced thrombocytopenia and ACS?
A. UFH
B. Enoxaparin
C. Bivalirudin
D. Fondaparinux
E. Dalteparin
11. Which of the following is the correct coagulation monitoring goal for a patient with ACS receiving enoxaparin?
A. Activated partial thromboplastin time (aPTT) 2.0 to 3.0 times control
B. aPTT 50 to 70 seconds
C. Activated clotting time less than 32 seconds

D. Anti-Xa levels greater than 1.5 IU/mL (1.5 kIU/L)
E. No coagulation goal recommended
12. Which of the following best describes a patient with ACS who is a candidate for treatment with amlodipine added to β-blocker?
A. Continued chest discomfort despite nitrates and atenolol
B. Acute heart failure while receiving metoprolol
C. HR of 80 bpm and BP of 150/90 mm Hg while receiving low-dose metoprolol and enalapril
D. Stable chronic obstructive pulmonary disease receiving a low-dose atenolol
E. Contraindication to metoprolol receiving diltiazem
13. In patients undergoing coronary artery bypass graft (CABG) surgery, which of the following is a preferred antithrombotic strategy in addition to aspirin?
A. UFH, discontinue prasugrel 5 days prior to surgery
B. Eptifibatide, discontinue clopidogrel 7 days prior to surgery
C. UFH, discontinue ticagrelor 5 days prior to surgery
D. Fondaparinux, discontinue clopidogrel 5 days prior to surgery
E. Bivalirudin, discontinue prasugrel 24 hours prior to surgery
14. Which anticoagulant regimen would be most appropriate for a 76-year-old woman (weight 64 kg [141 lb]) with NSTE-ACS with an estimated CrCl of 50 ml/min (0.83 mL/s) undergoing PCI?
A. UFH 3800 unit bolus, followed by 800 units/hour
B. Enoxaparin 140-mg SC twice daily
C. Fondaparinux 2.5-mg SC daily
D. Bivalirudin 24.5-mg bolus, followed by 35 mg/kg/hour infusion
E. No anticoagulant needed
15. Secondary interventions proven to reduce risk after ACS include all the following except:
A. Pneumococcal vaccination in age older than 65 years
B. Cardiac rehabilitation
C. Nonsteroidal anti-inflammatory agents
D. Cholesterol management
E. Dual antiplatelet therapy
ANSWERS
1. D
2. E
3. A
4. D
5. B
6. B
7. D
8. B
9. E
10. C
11. E
12. A
13. C
14. A
15. C

CHAPTER 9. ARRHYTHMIAS

1. Where in the heart is the atrioventricular (AV) node located?
A. High right atrium
B. Low right atrium
C. Junction of the atria and ventricles
D. High right ventricle

2. Which phase of the ventricular action potential is most likely to be altered by a sodium channel blocking drug?
A. Phase 0
B. Phase 1
C. Phase 2
D. Phase 3

3. Which one of the following ECG intervals or durations corresponds most closely to phase 3 on the ventricular action potential?
A. PR interval
B. QRS complex
C. QT interval
D. T wave

4. Which one of the following arrhythmias increases the risk of stroke two- to sevenfold?
A. Atrial fibrillation (AF)
B. Paroxysmal supraventricular tachycardia (PSVT)
C. Ventricular premature depolarizations (VPDs)

D. Ventricular tachycardia (VT)

5. Which one of the following most accurately describes the mechanism of AF?
A. Increased automaticity in the atria, triggering a single atrial reentrant circuit
B. Increased automaticity in the atria, triggering multiple simultaneous atrial reentrant circuits
C. Increased automaticity in the pulmonary veins, triggering a single atrial reentrant circuit
D. Increased automaticity in the pulmonary veins, triggering multiple simultaneous atrial reentrant circuits

6. Which one of the following most accurately describes the mechanism of PSVT?
A. A single reentrant circuit in the atrium
B. Multiple simultaneous reentrant circuits in the atria
C. Reentry involving the AV node
D. Reentry occurring in the ventricles

7. Which of the following is the common myocardial pathology associated with hypertension, ischemic heart disease, heart failure, and valve disease that promotes the electrophysiological alterations that result in atrial fibrillation?
A. Fibrosis of the SA node
B. Fibrosis of the AV node
C. Left atrial hypertrophy
D. Left ventricular hypertrophy

8. A 66-year-old man presents to the ED complaining of palpitations, dizziness, lightheadedness, and near-syncope. Past medical history is significant for hypertension for 10 years.
ECG reveals an irregularly irregular rhythm with no visible P waves and an undulating baseline.