

## 60 item Exam on CardioVascular Disorders with Answers and Rationale

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#### Course Outline

- a. Basic Anatomy
- b. Coronary artery disease
- c. Myocardial infarction
- d. Heart failure
- e. Abdominal aortic aneurysm
- f. Cardiomyopathy
- g. Pharmacology
- h. Laboratory values
- i. Diagnostic tools

Choose the BEST answer

1. Which of the following arteries primarily feeds the anterior wall of the heart?
- a. Circumflex artery
  - b. Internal mammary artery
  - c. **Left anterior descending artery**
  - d. Right coronary artery

*The left anterior descending artery is the primary source of blood for the anterior wall of the heart. The circumflex artery supplies the lateral wall, the internal mammary artery supplies the mammary, and the right coronary artery supplies the inferior wall of the heart.*

2. When do coronary arteries primarily receive blood flow?
- a. During inspiration
  - b. **During diastole**
  - c. During expiration
  - d. During systole

*Although the coronary arteries may receive a minute portion of blood during systole, most of the blood flow to coronary arteries is supplied during diastole. Breathing patterns are irrelevant to blood flow*

3. Which of the following illnesses is the leading cause of death in the US?
- a. Cancer
  - b. **Coronary artery disease**
  - c. Liver failure
  - d. Renal failure

*Coronary artery disease accounts for over 50% of all deaths in the US. Cancer accounts for approximately 20%. Liver failure and renal failure account for less than 10% of all deaths in the US.*

4. Which of the following conditions most commonly results in CAD?

- a. **Atherosclerosis**
- b. DM
- c. MI
- d. Renal failure

*Atherosclerosis, or plaque formation, is the leading cause of CAD. DM is a risk factor for CAD but isn't the most common cause. Renal failure doesn't cause CAD, but the two conditions are related. Myocardial infarction is commonly a result of CAD.*

5. Atherosclerosis impedes coronary blood flow by which of the following mechanisms?

- a. Plaques obstruct the vein
- b. **Plaques obstruct the artery**
- c. Blood clots form outside the vessel wall
- d. Hardened vessels dilate to allow the blood to flow through

*Arteries, not veins, supply the coronary arteries with oxygen and other nutrients. Atherosclerosis is a direct result of plaque formation in the artery. Hardened vessels can't dilate properly and, therefore, constrict blood flow.*

6. Which of the following risk factors for coronary artery disease cannot be corrected?

- a. Cigarette smoking
- b. DM
- c. **Heredity**
- d. HPN

*Because "heredity" refers to our genetic makeup, it can't be changed. Cigarette smoking cessation is a lifestyle change that involves behavior modification. Diabetes mellitus is a risk factor that can be controlled with diet, exercise, and medication. Altering one's diet, exercise, and medication can correct hypertension.*

7. Exceeding which of the following serum cholesterol levels significantly increases the risk of coronary artery disease?

- a. 100 mg/dl
- b. 150 mg/dl
- c. 175 mg/dl
- d. **200 mg/dl**

*Cholesterol levels above 200 mg/dl are considered excessive. They require dietary restriction and perhaps medication. Exercise also helps reduce cholesterol levels. The other levels listed are all below the nationally accepted levels for cholesterol and carry a lesser risk for CAD.*

8. Which of the following actions is the first priority care for a client exhibiting signs and symptoms of coronary artery disease?

- a. Decrease anxiety

**b. Enhance myocardial oxygenation**

- c. Administer sublingual nitroglycerin
- d. Educate the client about his symptoms

*Enhancing myocardial oxygenation is always the first priority when a client exhibits signs and symptoms of cardiac compromise. Without adequate oxygen, the myocardium suffers damage. Sublingual nitroglycerin is administered to treat acute angina, but its administration isn't the first priority. Although educating the client and decreasing anxiety are important in care delivery, neither are priorities when a client is compromised.*

9. Medical treatment of coronary artery disease includes which of the following procedures?

- a. Cardiac catheterization
- b. Coronary artery bypass surgery
- c. Oral medication administration**
- d. Percutaneous transluminal coronary angioplasty

*Oral medication administration is a noninvasive, medical treatment for coronary artery disease. Cardiac catheterization isn't a treatment but a diagnostic tool. Coronary artery bypass surgery and percutaneous transluminal coronary angioplasty are invasive, surgical treatments.*

10. Prolonged occlusion of the right coronary artery produces an infarction in which of the following areas of the heart?

- a. Anterior
- b. Apical
- c. Inferior**
- d. Lateral

*The right coronary artery supplies the right ventricle, or the inferior portion of the heart. Therefore, prolonged occlusion could produce an infarction in that area. The right coronary artery doesn't supply the anterior portion ( left ventricle ), lateral portion ( some of the left ventricle and the left atrium ), or the apical portion ( left ventricle ) of the heart.*

11. Which of the following is the most common symptom of myocardial infarction?

- a. Chest pain**
- b. Dyspnea
- c. Edema
- d. Palpitations

*The most common symptom of an MI is chest pain, resulting from deprivation of oxygen to the heart. Dyspnea is the second most common symptom, related to an increase in the metabolic needs of the body during an MI. Edema is a later sign of heart failure, often seen after an MI. Palpitations may result from reduced cardiac output, producing arrhythmias.*

12. Which of the following landmarks is the correct one for obtaining an apical pulse?
- a. Left intercostal space, midaxillary line
  - b. Left fifth intercostal space, midclavicular line**
  - c. Left second intercostal space, midclavicular line
  - d. Left seventh intercostal space, midclavicular line

*The correct landmark for obtaining an apical pulse is the left intercostal space in the midclavicular line. This is the point of maximum impulse and the location of the left ventricular apex. The left second intercostal space in the midclavicular line is where the pulmonic sounds are auscultated. Normally, heart sounds aren't heard in the midaxillary line or the seventh intercostal space in the midclavicular line.*

13. Which of the following systems is the most likely origin of pain the client describes as knifelike chest pain that increases in intensity with inspiration?
- a. Cardiac
  - b. Gastrointestinal
  - c. Musculoskeletal
  - d. Pulmonary**

*Pulmonary pain is generally described by these symptoms. Musculoskeletal pain only increase with movement. Cardiac and GI pains don't change with respiration.*

14. A murmur is heard at the second left intercostal space along the left sternal border. Which valve area is this?
- a. Aortic
  - b. Mitral
  - c. Pulmonic**
  - d. Tricuspid

*Abnormalities of the pulmonic valve are auscultated at the second left intercostal space along the left sternal border. Aortic valve abnormalities are heard at the second intercostal space, to the right of the sternum. Mitral valve abnormalities are heard at the fifth intercostal space in the midclavicular line. Tricuspid valve abnormalities are heard at the third and fourth intercostal spaces along the sternal border.*

15. Which of the following blood tests is most indicative of cardiac damage?
- a. Lactate dehydrogenase
  - b. Complete blood count
  - c. Troponin I**
  - d. Creatine kinase

*Troponin I levels rise rapidly and are detectable within 1 hour of myocardial injury. Troponin I levels aren't detectable in people without cardiac injury. Lactate dehydrogenase is present in almost all body tissues and not specific to heart muscle. LDH isoenzymes are useful in diagnosing cardiac injury. CBC is obtained to review blood counts, and a complete chemistry is obtained to review electrolytes. Because CK levels may rise with skeletal muscle injury, CK isoenzymes are required to detect cardiac injury.*

16. What is the primary reason for administering morphine to a client with myocardial infarction?
- a. To sedate the client
  - b. To decrease the client's pain
  - c. To decrease the client's anxiety
  - d. To decrease oxygen demand on the client's heart**

*Morphine is administered because it decreases myocardial oxygen demand. Morphine will also decrease pain and anxiety while causing sedation, but isn't primarily given for those reasons.*

17. Which of the following conditions is most commonly responsible for myocardial infarction?
- a. Aneurysm
  - b. Heart failure
  - c. Coronary artery thrombosis**
  - d. Renal failure

*Coronary artery thrombosis causes occlusion of the artery, leading to myocardial death. An aneurysm is an outpouching of a vessel and doesn't cause an MI. Renal failure can be associated with MI but isn't a direct cause. Heart failure is usually the result of an MI.*

18. What supplemental medication is most frequently ordered in conjunction with furosemide (Lasix)?
- a. Chloride
  - b. Digoxin
  - c. Potassium**
  - d. Sodium

*Supplemental potassium is given with furosemide because of the potassium loss that occurs as a result of this diuretic. Chloride and sodium aren't lost during diuresis. Digoxin acts to increase contractility but isn't given routinely with furosemide.*

19. After myocardial infarction, serum glucose levels and free fatty acids are both increase. What type of physiologic changes are these?
- a. Electrophysiologic
  - b. Hematologic
  - c. Mechanical
  - d. Metabolic**

*Both glucose and fatty acids are metabolites whose levels increase after a myocardial infarction. Mechanical changes are those that affect the pumping action of the heart, and electro physiologic changes affect conduction. Hematologic changes would affect the blood.*

20. Which of the following complications is indicated by a third heart sound (S3)?

- a. Ventricular dilation**
- b. Systemic hypertension
- c. Aortic valve malfunction
- d. Increased atrial contractions

*Rapid filling of the ventricles causes vasodilation that is auscultated as S3. Increased atrial contraction or systemic hypertension can result in a fourth heart sound. Aortic valve malfunction is heard as a murmur.*

21. After an anterior wall

myocardial infarction, which of the following problems is indicated by auscultation of crackles in the lungs?

- a. Left-sided heart failure**
- b. Pulmonic valve malfunction
- c. Right-sided heart failure
- d. Tricuspid valve malfunction

*The left ventricle is responsible for the most of the cardiac output. An anterior wall MI may result in a decrease in left ventricular function. When the left ventricle doesn't function properly, resulting in left-sided heart failure, fluid accumulates in the interstitial and alveolar spaces in the lungs and causes crackles. Pulmonic and tricuspid valve malfunction causes right-sided heart failure.*

22. Which of the following diagnostic tools is most commonly used to determine the location of myocardial damage?

- a. Cardiac catheterization
- b. Cardiac enzymes
- c. Echocardiogram
- d. Electrocardiogram**

*The ECG is the quickest, most accurate, and most widely used tool to determine the location of myocardial infarction. Cardiac enzymes are used to diagnose MI but can't determine the location. An echocardiogram is used most widely to view myocardial wall function after an MI has been diagnosed. Cardiac catheterization is an invasive study for determining coronary artery disease and may also indicate the location of myocardial damage, but the study may not be performed immediately.*

23. What is the first intervention for a client experiencing myocardial infarction?

- a. Administer morphine
- b. Administer oxygen**
- c. Administer sublingual nitroglycerin
- d. Obtain an electrocardiogram

*Administering supplemental oxygen to the client is the first priority of care. The myocardium is deprived of oxygen during an infarction, so additional oxygen is administered to assist in oxygenation and prevent further damage. Morphine and sublingual nitroglycerin are also used to treat MI, but they're more commonly*

*administered after the oxygen. An ECG is the most common diagnostic tool used to evaluate MI.*

24. What is the most appropriate nursing response to a myocardial infarction client who is fearful of dying?

- a. **"Tell me about your feeling right now."**
- b. "When the doctor arrives, everything will be fine."
- c. "This is a bad situation, but you'll feel better soon."
- d. "Please be assured we're doing everything we can to make you feel better."

*Validation of the client's feelings is the most appropriate response. It gives the client a feeling of comfort and safety. The other three responses give the client false hope. No one can determine if a client experiencing MI will feel or get better and therefore, these responses are inappropriate.*

25. Which of the following classes of medications protects the ischemic myocardium by blocking catecholamines and sympathetic nerve stimulation?

- a. **Beta-adrenergic blockers**
- b. Calcium channel blockers
- c. Narcotics
- d. Nitrates

*Beta-adrenergic blockers work by blocking beta receptors in the myocardium, reducing the response to catecholamines and sympathetic nerve stimulation. They protect the myocardium, helping to reduce the risk of another infarction by decreasing the workload of the heart and decreasing myocardial oxygen demand. Calcium channel blockers reduce the workload of the heart by decreasing the heart rate. Narcotics reduce myocardial oxygen demand, promote vasodilation, and decreased anxiety. Nitrates reduce myocardial oxygen consumption by decreasing left ventricular end-diastolic pressure (preload) and systemic vascular resistance (afterload).*

26. What is the most common complication of a myocardial infarction?

- a. Cardiogenic shock
- b. Heart failure
- c. **Arrhythmias**
- d. Pericarditis

*Arrhythmias, caused by oxygen deprivation to the myocardium, are the most common complication of an MI. cardiogenic shock, another complication of MI, is defined as the end stage of left ventricular dysfunction. The condition occurs in approximately 15% of clients with MI. Because the pumping function of the heart is compromised by an MI, heart failure is the second most common complication. Pericarditis most commonly results from a bacterial or viral infection but may occur after MI.*

27. With which of the following disorders is jugular vein distention most prominent?

- a. Abdominal aortic aneurysm
- b. **Heart failure**

- c. Myocardial infarction
- d. Pneumothorax

*Elevated venous pressure, exhibited as jugular vein distention, indicates a failure of the heart to pump. Jugular vein distention isn't a symptom of abdominal aortic aneurysm or pneumothorax. An MI, if severe enough, can progress to heart failure; however, in and of itself, an MI doesn't cause jugular vein distention.*

28. What position should the nurse place the head of the bed in to obtain the most accurate reading of jugular vein distention?
- a. High-fowler's
  - b. Raised 10 degrees
  - c. Raised 30 degrees**
  - d. Supine position

*Jugular venous pressure is measured with a centimeter ruler to obtain the vertical distance between the sternal angle and the point of highest pulsation with the head of the bed inclined between 15 and 30 degrees. Inclined pressure can't be seen when the client is supine or when the head of the bed is raised 10 degrees because the point that marks the pressure level is above the jaw (therefore, not visible). In high Fowler's position, the veins would be barely discernible above the clavicle.*

29. Which of the following parameters should be checked before administering digoxin?
- a. Apical pulse**
  - b. Blood pressure
  - c. Radial pulse
  - d. Respiratory rate

*An apical pulse is essential or accurately assessing the client's heart rate before administering digoxin. The apical pulse is the most accurate point in the body. Blood pressure is usually only affected if the heart rate is too low, in which case the nurse would withhold digoxin. The radial pulse can be affected by cardiac and vascular disease and therefore, won't always accurately depict the heart rate. Digoxin has no effect on respiratory function.*

30. Toxicity from which of the following medications may cause a client to see a green halo around lights?
- a. Digoxin**
  - b. Furosemide
  - c. Metoprolol
  - d. Enalapril

*One of the most common signs of digoxin toxicity is the visual disturbance known as the green halo sign. The other medications aren't associated with such an effect.*

31. Which of the following symptoms is most commonly associated with left-sided heart failure?
- a. Crackles**

- b. Arrhythmias
- c. Hepatic engorgement
- d. Hypotension

*Crackles in the lungs are a classic sign of left-sided heart failure. These sounds are caused by fluid backing up into the pulmonary system. Arrhythmias can be associated with both right and left-sided heart failure. Left-sided heart failure causes hypertension secondary to an increased workload on the system.*

32. In which of the following disorders would the nurse expect to assess sacral edema in bedridden client?

- a. DM
- b. Pulmonary emboli
- c. Renal failure
- d. Right-sided heart failure**

*The most accurate area on the body to assess dependent edema in a bedridden client is the sacral area. Sacral, or dependent, edema is secondary to right-sided heart failure. Diabetes mellitus, pulmonary emboli, and renal disease aren't directly linked to sacral edema.*

33. Which of the following symptoms might a client with right-sided heart failure exhibit?

- a. Adequate urine output
- b. Polyuria
- c. Oliguria**
- d. Polydipsia

*Inadequate deactivation of aldosterone by the liver after right-sided heart failure leads to fluid retention, which causes oliguria. Adequate urine output, polyuria, and polydipsia aren't associated with right-sided heart failure.*

34. Which of the following classes of medications maximizes cardiac performance in clients with heart failure by increasing ventricular contractility?

- a. Beta-adrenergic blockers
- b. Calcium channel blockers
- c. Diuretics
- d. Inotropic agents**

*Inotropic agents are administered to increase the force of the heart's contractions, thereby increasing ventricular contractility and ultimately increasing cardiac output. Beta-adrenergic blockers and calcium channel blockers decrease the heart rate and ultimately decrease the workload of the heart. Diuretics are administered to decrease the overall vascular volume, also decreasing the workload of the heart.*

35. Stimulation of the sympathetic nervous system produces which of the following responses?

- a. Bradycardia

- b. Tachycardia**
- c. Hypotension
- d. Decreased myocardial contractility

*Stimulation of the sympathetic nervous system causes tachycardia and increased contractility. The other symptoms listed are related to the parasympathetic nervous system, which is responsible for slowing the heart rate.*

36. Which of the following conditions is most closely associated with weight gain, nausea, and a decrease in urine output?

- a. Angina pectoris
- b. Cardiomyopathy
- c. Left-sided heart failure
- d. Right-sided heart failure**

*Weight gain, nausea, and a decrease in urine output are secondary effects of right-sided heart failure. Cardiomyopathy is usually identified as a symptom of left-sided heart failure. Left-sided heart failure causes primarily pulmonary symptoms rather than systemic ones. Angina pectoris doesn't cause weight gain, nausea, or a decrease in urine output.*

37. What is the most common cause of abdominal aortic aneurysm?

- a. Atherosclerosis**
- b. DM
- c. HPN
- d. Syphilis

*Atherosclerosis accounts for 75% of all abdominal aortic aneurysms. Plaques build up on the wall of the vessel and weaken it, causing an aneurysm. Although the other conditions are related to the development of an aneurysm, none is a direct cause.*

38. In which of the following areas is an abdominal aortic aneurysm most commonly located?

- a. Distal to the iliac arteries
- b. Distal to the renal arteries**
- c. Adjacent to the aortic branch
- d. Proximal to the renal arteries

*The portion of the aorta distal to the renal arteries is more prone to an aneurysm because the vessel isn't surrounded by stable structures, unlike the proximal portion of the aorta. Distal to the iliac arteries, the vessel is again surrounded by stable vasculature, making this an uncommon site for an aneurysm. There is no area adjacent to the aortic arch, which bends into the thoracic (descending) aorta.*

39. A pulsating abdominal mass usually indicates which of the following conditions?

- a. Abdominal aortic aneurysm**
- b. Enlarged spleen
- c. Gastric distention
- d. Gastritis

*The presence of a pulsating mass in the abdomen is an abnormal finding, usually indicating an outpouching in a weakened vessel, as in abdominal aortic aneurysm. The finding, however, can be normal on a thin person. Neither an enlarged spleen, gastritis, nor gastric distention cause pulsation.*

40. What is the most common symptom in a client with abdominal aortic aneurysm?

- a. **Abdominal pain**
- b. Diaphoresis
- c. Headache
- d. Upper back pain

*Abdominal pain in a client with an abdominal aortic aneurysm results from the disruption of normal circulation in the abdominal region. Lower back pain, not upper, is a common symptom, usually signifying expansion and impending rupture of the aneurysm. Headache and diaphoresis aren't associated with abdominal aortic aneurysm.*

41. Which of the following symptoms usually signifies rapid expansion and impending rupture of an abdominal aortic aneurysm?

- a. Abdominal pain
- b. Absent pedal pulses
- c. Angina
- d. **Lower back pain**

*Lower back pain results from expansion of the aneurysm. The expansion applies pressure in the abdominal cavity, and the pain is referred to the lower back. Abdominal pain is most common symptom resulting from impaired circulation. Absent pedal pulses are a sign of no circulation and would occur after a ruptured aneurysm or in peripheral vascular disease. Angina is associated with atherosclerosis of the coronary arteries.*

42. What is the definitive test used to diagnose an abdominal aortic aneurysm?

- a. Abdominal X-ray
- b. **Arteriogram**
- c. CT scan
- d. Ultrasound

*An arteriogram accurately and directly depicts the vasculature; therefore, it clearly delineates the vessels and any abnormalities. An abdominal aneurysm would only be visible on an X-ray if it were calcified. CT scan and ultrasound don't give a direct view of the vessels and don't yield as accurate a diagnosis as the arteriogram.*

43. Which of the following complications is of greatest concern when caring for a preoperative abdominal aneurysm client?

- a. HPN
- b. **Aneurysm rupture**
- c. Cardiac arrhythmias
- d. Diminished pedal pulses

***Rupture of the aneurysm is a life-threatening emergency and is of the greatest concern for the nurse caring for this type of client. Hypertension should be avoided and controlled because it can cause the weakened vessel to rupture. Diminished pedal pulses, a sign of poor circulation to the lower extremities, are associated with an aneurysm but isn't life threatening. Cardiac arrhythmias aren't directly linked to an aneurysm.***

44. Which of the following blood vessel layers may be damaged in a client with an aneurysm?
- a. Externa
  - b. Interna
  - c. Media**
  - d. Interna and Media

***The factor common to all types of aneurysms is a damaged media. The media has more smooth muscle and less elastic fibers, so it's more capable of vasoconstriction and vasodilation. The interna and externa are generally no damaged in an aneurysm.***

45. When assessing a client for an abdominal aortic aneurysm, which area of the abdomen is most commonly palpated?
- a. Right upper quadrant
  - b. Directly over the umbilicus
  - c. Middle lower abdomen to the left of the midline**
  - d. Midline lower abdomen to the right of the midline

***The aorta lies directly left of the umbilicus; therefore, any other region is inappropriate for palpation.***

46. Which of the following conditions is linked to more than 50% of clients with abdominal aortic aneurysms?
- a. DM
  - b. HPN**
  - c. PVD
  - d. Syphilis

***Continuous pressure on the vessel walls from hypertension causes the walls to weaken and an aneurysm to occur. Atherosclerotic changes can occur with peripheral vascular diseases and are linked to aneurysms, but the link isn't as strong as it is with hypertension. Only 1% of clients with syphilis experience an aneurysm. Diabetes mellitus doesn't have direct link to aneurysm.***

47. Which of the following sounds is distinctly heard on auscultation over the abdominal region of an abdominal aortic aneurysm client?
- a. Bruit**
  - b. Crackles
  - c. Dullness
  - d. Friction rubs

***A bruit, a vascular sound resembling heart murmur, suggests partial arterial occlusion. Crackles are indicative of fluid in the lungs. Dullness is heard over solid organs, such as the liver. Friction rubs indicate inflammation of the peritoneal surface.***

48. Which of the following groups of symptoms indicated a ruptured abdominal aneurysm?

- a. Lower back pain, increased BP, decreased RBC, increased WBC
- b. Severe lower back pain, decreased BP, decreased RBC, increased WBC**
- c. Severe lower back pain, decreased BP, decreased RBC, decreased WBC
- d. Intermittent lower back pain, decreased BP, decreased RBC, increased WBC

*Severe lower back pain indicates an aneurysm rupture, secondary to pressure being applied within the abdominal cavity. When rupture occurs, the pain is constant because it can't be alleviated until the aneurysm is repaired. Blood pressure decreases due to the loss of blood. After the aneurysm ruptures, the vasculature is interrupted and blood volume is lost, so blood pressure wouldn't increase. For the same reason, the RBC count is decreased – not increase. The WBC count increases as cells migrate to the site of injury.*

49. Which of the following complications of an abdominal aortic repair is indicated by detection of a hematoma in the perineal area?

- a. Hernia
- b. Stage 1 pressure ulcer
- c. Retroperitoneal rupture at the repair site**
- d. Rapid expansion of the aneurysm

*Blood collects in the retroperitoneal space and is exhibited as a hematoma in the perineal area. This rupture is most commonly caused by leakage at the repair site. A hernia doesn't cause vascular disturbances, nor does a pressure ulcer. Because no bleeding occurs with rapid expansion of the aneurysm, a hematoma won't form.*

50. Which hereditary disease is most closely linked to aneurysm?

- a. Cystic fibrosis
- b. Lupus erythematosus
- c. Marfan's syndrome**
- d. Myocardial infarction

*Marfan's syndrome results in the degeneration of the elastic fibers of the aortic media. Therefore, clients with the syndrome are more likely to develop an aortic aneurysm. Although cystic fibrosis is hereditary, it hasn't been linked to aneurysms. Lupus erythematosus isn't hereditary. Myocardial infarction is neither hereditary nor a disease.*

51. Which of the following treatments is the definitive one for a ruptured aneurysm?

- a. Antihypertensive medication administration
- b. Aortogram
- c. Beta-adrenergic blocker administration
- d. Surgical intervention**

*When the vessel ruptures, surgery is the only intervention that can repair it. Administration of antihypertensive medications and beta-adrenergic blockers can help*

*control hypertension, reducing the risk of rupture. An aortogram is a diagnostic tool used to detect an aneurysm.*

52. Which of the following heart muscle diseases is unrelated to other cardiovascular disease?

- a. Cardiomyopathy**
- b. Coronary artery disease
- c. Myocardial infarction
- d. Pericardial Effusion

*Cardiomyopathy isn't usually related to an underlying heart disease such as atherosclerosis. The etiology in most cases is unknown. Coronary artery disease and myocardial infarction are directly related to atherosclerosis. Pericardial effusion is the escape of fluid into the pericardial sac, a condition associated with pericarditis and advanced heart failure.*

53. Which of the following types of cardiomyopathy can be associated with childbirth?

- a. Dilated**
- b. Hypertrophic
- c. Myocarditis
- d. Restrictive

*Although the cause isn't entirely known, cardiac dilation and heart failure may develop during the last month of pregnancy or the first few months after birth. The condition may result from a preexisting cardiomyopathy not apparent prior to pregnancy. Hypertrophic cardiomyopathy is an abnormal symmetry of the ventricles that has an unknown etiology but a strong familial tendency. Myocarditis isn't specifically associated with childbirth. Restrictive cardiomyopathy indicates constrictive pericarditis; the underlying cause is usually myocardial.*

54. Septal involvement occurs in which type of cardiomyopathy?

- a. Congestive
- b. Dilated
- c. Hypertrophic**
- d. Restrictive

*In hypertrophic cardiomyopathy, hypertrophy of the ventricular septum – not the ventricle chambers – is apparent. This abnormality isn't seen in other types of cardiomyopathy.*

55. Which of the following recurring conditions most commonly occurs in clients with cardiomyopathy?

- a. Heart failure**
- b. DM
- c. MI
- d. Pericardial effusion

*Because the structure and function of the heart muscle is affected, heart failure most commonly occurs in clients with cardiomyopathy. Myocardial infarction results from prolonged myocardial ischemia due to reduced blood flow through one of the coronary arteries. Pericardial effusion is most predominant in clients with pericarditis. Diabetes mellitus is unrelated to cardiomyopathy.*

56. What is the term used to describe an enlargement of the heart muscle?

- a. **Cardiomegaly**
- b. Cardiomyopathy
- c. Myocarditis
- d. Pericarditis

*Cardiomegaly denotes an enlarged heart muscle. Cardiomyopathy is a heart muscle disease of unknown origin. Myocarditis refers to inflammation of heart muscle. Pericarditis is an inflammation of the pericardium, the sac surrounding the heart.*

57. Dyspnea, cough, expectoration, weakness, and edema are classic signs and symptoms of which of the following conditions?

- a. Pericarditis
- b. Hypertension
- c. Obliterative
- d. **Restrictive**

*These are the classic symptoms of heart failure. Pericarditis is exhibited by a feeling of fullness in the chest and auscultation of a pericardial friction rub. Hypertension is usually exhibited by headaches, visual disturbances and a flushed face. Myocardial infarction causes heart failure but isn't related to these symptoms.*

58. Which of the following types of cardiomyopathy does not affect cardiac output?

- a. Dilated
- b. **Hypertrophic**
- c. Restrictive
- d. Obliterative

*Cardiac output isn't affected by hypertrophic cardiomyopathy because the size of the ventricle remains relatively unchanged. Dilated cardiomyopathy, and restrictive cardiomyopathy all decrease cardiac output.*

59. Which of the following cardiac conditions does a fourth heart sound (S4) indicate?

- a. Dilated aorta
- b. Normally functioning heart
- c. Decreased myocardial contractility
- d. **Failure of the ventricle to eject all the blood during systole**

*An S4 occurs as a result of increased resistance to ventricular filling after atrial contraction. This increased resistance is related to decrease compliance of the ventricle. A dilated aorta doesn't cause an extra heart sound, though it does cause a murmur. Decreased myocardial contractility is heard as a third heart sound. An S4 isn't heard in a normally functioning heart.*

60. Which of the following classes of drugs is most widely used in the treatment of

cardiomyopathy?

- a. Antihypertensive
- b. Beta-adrenergic blockers**
- c. Calcium channel blockers
- d. Nitrates

*By decreasing the heart rate and contractility, beta-adrenergic blockers improve myocardial filling and cardiac output, which are primary goals in the treatment of cardiomyopathy. Antihypertensives aren't usually indicated because they would decrease cardiac output in clients who are often already hypotensive. Calcium channel blockers are sometimes used for the same reasons as beta-adrenergic blockers; however, they aren't as effective as beta-adrenergic blockers and cause increase hypotension. Nitrates aren't used because of their dilating effects, which would further compromise the myocardium.*

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