

Practice Exam Questions

AMERICAN
ASSOCIATION
of CRITICAL-CARE
NURSES

CMC-Adult



Cardiac Medicine Certification



EXAMKILLER

Help Pass Your Exam At First Try

Total Question: 299 QAs

Question No: 1

Which of the following findings is suggestive of pulsus paradoxus?

- A. Inspiratory drop in SBP > 10 mmHg
- B. Expiratory drop in SBP > 10 mmHg
- C. Inspiratory rise in SBP > 10 mmHg
- D. Expiratory drop in SBP > 10 mmHg

Answer: A

Explanation: The finding suggestive of pulsus paradoxus is inspiratory drop in SBP > 10 mmHg. Pulsus paradoxus can be found in cardiac tamponade, constrictive pericarditis, airway obstruction, superior vena cava (SVC) obstruction, COPD, and asthma.

Question No: 2

The nurse is preparing to record the blood pressure of a patient. What should be the correct position of the patient and arm?

- A. Patient sitting on chair taken in left arm
- B. Patient supine and upright taken in both arms
- C. Patient in any position taken in any of the arms
- D. Patient lying down on bed taken in right arm

Answer: B

Explanation: The correct position of the patient and arm is that blood pressure should be taken in both arms with the patient supine and upright with the arm at the level of heart. Dependency of the arm below heart level leads to an overestimation of systolic and diastolic pressures of about 10 mm Hg and raising the arm above heart level leads to underestimation of blood pressures.

Question No: 3

Which of the following correctly defines pulse pressure?

- A. Mean of systolic blood pressure and diastolic blood pressure
- B. Difference of systolic blood pressure and diastolic blood pressure
- C. Sum of systolic blood pressure and diastolic blood pressure
- D. Mean arterial blood pressure

Answer: B

Explanation: Pulse pressure (PP) is defined as the difference of systolic blood pressure and diastolic blood pressure ($PP = \text{systolic BP (SBP)} - \text{diastolic BP (DBP)}$).

Question No: 4

Pulsus bisferiens is present in which of the following conditions?

- A. Aortic stenosis + Aortic regurgitation
- B. Aortic stenosis
- C. Aortic regurgitation
- D. Mitral stenosis + Mitral regurgitation

Answer: A

Explanation: Pulsus bisferiens is a double waveform present in both the aortic stenosis + aortic regurgitation conditions combined.

Question No: 5

What is the character of pulsus parvus et tardus?

- A. Slow uprising
- B. Sharp uprising
- C. Slow down falling
- D. Sharp down falling

Answer: A

Explanation: The character of pulsus parvus et tardus is slow uprising of the carotid upstroke due to severe aortic stenosis (AS).

Question No: 6

Which of the following statements is not true about third heart sound (S3)?

- A. Heard in volume overloaded ventricle
- B. Occurs during period of rapid ventricular filling
- C. Heard in pressure overloaded ventricle
- D. Low frequency sound, best heard with bell at apex

Answer: C

Explanation: The statement not true about third heart sound is "Heard in pressure overloaded ventricle". Third heart sound (S3) can be heard in each of the following:

- volume overloaded ventricle
- occurs during period of rapid ventricular filling
- low frequency - best heard with bell at apex

Question No: 7

Which of the following terms correctly defines the character of pericardial friction rub?

- A. Rough rumbling sound
- B. Soft cooing sound
- C. Scratchy sound like Velcro
- D. Harsh and husky

Answer: C

Explanation: The character of pericardial friction rub is a scratchy sound like Velcro. Rough rumbling sound is produced by stenotic murmurs such as murmur of mitral stenosis. Soft cooing sound may be heard in some cases of aortic regurgitation.

Question No: 8

In which of the following set of conditions murmur heard is not a flow murmur?

- A. Thyrotoxicosis
- B. Anaemia
- C. Aortic stenosis
- D. Pregnancy

Answer: C

Explanation: In aortic stenosis the murmur heard is not a flow murmur, the murmur of aortic stenosis is stenotic murmur due to turbulent flow of blood through the Stenosed valve. Flow murmurs are heard in following conditions:

- Anemia
- Thyrotoxicosis
- Pregnancy
- Arteriovenous fistula
- Children
- Fever

Question No: 9

A patient presents with complaints of palpitations and loss of weight. Blood investigations show thyrotoxicosis. Which of the following murmurs are expected to be heard on auscultation?

- A. Diastolic murmur
- B. Soft systolic murmur
- C. Flow murmur
- D. Crescendo-decrescendo murmur

Answer: C

Explanation: The murmur expected to be heard on auscultation in a patient with thyrotoxicosis is flow murmurs. High output or "flow" murmurs can be heard in conditions such as anemia, thyrotoxicosis, pregnancy, arteriovenous fistula, children and fever.

Question No: 10

Which of the following waveforms is not a part of jugular venous pulsation?

- A. a-wave
- B. v-wave
- C. d-wave
- D. c-wave

Answer: C

Explanation: d-wave is not a part of jugular venous pulsation. The normal waveforms in jugular venous pulsations are:

- "a" wave = atrial contraction - precedes carotid pulse
- "x" descent = atrial relaxation
- "c" wave = bulging up of TV during RV systole (may reflect carotid pulse in neck)
- "x prime" descent = descent of base of heart during ventricular systole
- "v" wave = passive atrial filling against closed AV valve
- "y" descent = early rapid atrial emptying following opening of AV valve - occurs after carotid pulse felt

Question No: 11

A 75-year old male patient is undergoing carotid endarterectomy. A cardiac nurse is explaining to the patient about the procedure. Which of the following statements correctly represent the method involved and aim of the procedure?

- A. Carotid artery is clamped and plaque is removed to increase the cerebral blood flow
- B. Carotid artery is dissected and plaque is removed to increase the cerebral blood flow

- C. Diseased part of carotid artery is removed to increase the cerebral blood flow
- D. Diseased carotid artery is closed and a bypass graft is applied to increase the cerebral blood flow

Answer: A

Explanation: The statement "Carotid artery is clamped and plaque is removed to increase the cerebral blood flow" correctly represents the method and aim of carotid endarterectomy. Carotid endarterectomy is a common procedure that removes plaque build-up within the carotid artery that serves cerebral blood flow. The procedure involves clamping of the carotid artery and then removal of the plaque build-up to restore blood flow.

Question No: 12

In which of the following conditions is ST segment elevation seen on an ECG?

- A. LAH
- B. RVH
- C. Early repolarization after an attack of angina
- D. Myocardial infarction

Answer: D

Explanation: ST segment elevation is seen on an ECG in cases of myocardial infarction. Other conditions in which ST segment elevation is present: left ventricular hypertrophy, acute pericarditis, left bundle branch block with acute MI, advanced hyperkalemia, hypothermia

Question No: 13

The bypass pathway known as bundle of Kent is present in Wolf-Parkinson-White syndrome. Which anatomical structures are connected via the bundle of Kent?

- A. Sinoatrial node and atrioventricular node
- B. Sinoatrial node and ventricle
- C. Atria and ventricle
- D. Atrioventricular node and ventricle

Answer: C

Explanation: The bundle of Kent connects the two anatomical structures of heart, the atria and the ventricle. Wolf-Parkinson-White syndrome develops because of the formation of extra electrical circuits within the heart. The condition leads to rapid heart rate and abnormal electrocardiogram. Wolf-Parkinson-White syndrome is a syndrome, and by definition, an identifiable external cause is not known. It is caused by an accessory pathway in the cardiac conduction system that causes arrhythmias in some individuals. The condition is congenital and there are no risk factors.

Question No: 14

Which of the following is not a cause of long QT?

- A. Hypomagnesemia
- B. Hypermagnesemia
- C. Hypokalemia
- D. Hyponatremia

Answer: B

Explanation: Hypermagnesemia is not a cause of long QT. The causes of long QT syndromes are: hypokalemia, hypomagnesemia, congenital long QT syndromes, drugs like quinidine, phenothiazine, sotalol, erythromycin

etc.

Question No: 15

Presence of delta wave in ECG is characteristic finding of Wolf-Parkinson-White syndrome. How and where is it visible in ECG?

- A. Slurring at the end of QRS complex
- B. Initial slurring of down stroke of QRS complex
- C. Delayed upstroke at the end of QRS complex
- D. Slurred upstroke of QRS complex

Answer: D

Explanation: Delta waves are visible in ECG as slurred upstroke of QRS complex in Wolf-Parkinson-White syndrome, this is due to the accessory pathway that is characteristic of Wolf-Parkinson-White syndrome.

Question No: 16

Which of the following statements are not true about sick sinus syndrome?

- A. Sick sinus syndrome is caused due to structural sinoatrial node disease
- B. Treatment is pacing for bradycardia and medicines for tachycardia
- C. It may present as complete heart block
- D. It may present as tachy-brady syndrome

Answer: C

Explanation: The statement not true about sick sinus syndrome (SSS) is "It may present as complete heart block". Causes of sick sinus syndrome are structural SA node disease, autonomic abnormalities, or both; bradycardia may be punctuated by episodes of SVT, especially atrial fibrillation or atrial flutter (tachy-brady syndrome). Treatment is pacing for bradycardia and medicines for tachycardia.

Question No: 17

Which of the following is not an indication of cardiac stress testing?

- A. Assessment of chest pain
- B. Assessment of myocardial viability
- C. Assessment of ventricular function
- D. Preoperative screening and risk assessment

Answer: C

Explanation: Assessment of ventricular function is not an indication of cardiac stress testing. Indications of cardiac stress testing are:

- Assessment of chest pain (detection of coronary artery disease)
- Risk stratification post-MI
- Preoperative screening and risk assessment
- Assessment of response to therapy
- Assessment of myocardial viability

Question No: 18

Which of the following parameters are not used for assessment of ventricular function?

- A. Left ventricular ejection fraction
- B. Right ventricular ejection fraction

D. Thickness of interventricular septum

Explanation: Thickness of interventricular septum is not used as a parameter for assessment of ventricular function. Parameters used for ventricular function assessment are (LVEF, RVEF, ventricular size and volume, wall motion anomalies, etc.)

A cardiac nurse records the ECG of a patient presenting with severe chest pain which shows ST-segment elevation and pathological Q-waves in leads II, III and aVF. Which of the following arteries is likely to be involved?

B. Right coronary artery

D. Both Right coronary artery and Circumflex artery

Explanation: Right coronary artery is most likely to be involved if pathological Q-wave and ST-T changes are present in leads II, III and aVF.

Infarct Area Usual Involved Vessel Usual Involved Vessel Q waves Q waves Infarct Area Usual Involved Vessel Q waves

Anteroseptal Anterior Anterolateral Extensive anterior Anteroseptal Anterior Anterolateral Extensive anterior
Left descending (LAD) Left descending (LAD) V1, V2 V3, V4 I, aVL, V3-V6 I, aVL, V1 - V6 V1, V2 V3, V4 I, aVL,
V3-V6 I, aVL, V1 - V6 Anteroseptal Anterior Anterolateral Extensive anterior Left descending (LAD) V1, V2 V3,
V4 I, aVL, V3-V6 I, aVL, V1 - V6

Inferior Right coronary artery (RCA) II, III, aVF Inferior Right coronary artery (RCA) II, III, aVF

Lateral Circumflex	I, aVL, V5, V6	Lateral Circumflex	I, aVL, V5, V6
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Posterior RCA (accompanies inf. MI) Circumflex (isolated post. MI) RCA (accompanies inf. MI)
Circumflex (isolated post. MI) V6, mirror image V1 and V2 V6, mirror image V1 and V2. Posterior RCA
(accompanies inf. MI) Circumflex (isolated post. MI) V6, mirror image V1 and V2.

Right ventricle Right ventricle RCA (most often) RCA (most often) V4R (V5R and V6R) (right sided chest leads) V4R (V5R and V6R) (right sided chest leads) Right ventricle RCA (most often) V4R (V5R and V6R) (right sided chest leads)

A patient presents whom is diagnosed to have dyslipidemia. Which of the following is not a part of goal of treatment in this patient?

B. Increasing total cholesterol levels

D. Increasing high-density lipoprotein levels

Explanation: The goal of treatment in a patient of dyslipidemia is to control lipid levels, decreasing low-density

lipoprotein level and triglyceride levels and increasing high-density lipoprotein levels, as well as prevent the onset of cardiovascular diseases such as coronary artery disease, peripheral artery disease, heart attack and stroke.

Question No: 21

Which of the following are not used as stressors in cardiac stress testing?

- A. Treadmill
- B. Dipyridamole
- C. Noradrenaline
- D. Dobutamine

Answer: C

Explanation: Noradrenaline is not used as a stressor in cardiac stress testing. The stressors used are

- Physical stressors: treadmill or bicycle
- Increased coronary flow: dipyridamole (Persantine), adenosine
- Increased myocardial O₂ demand: dobutamine (β 1-selective agonist)

Question No: 22

Which of the following statement is correct about junctional premature beat?

- A. Multiple ectopic supraventricular beat
- B. No P wave preceding the premature QRS complex
- C. Single ectopic ventricular beat
- D. Abnormal P wave before each QRS complex

Answer: B

Explanation: The correct statement about junctional premature beat is that there is no P wave preceding the premature QRS complex. In junctional rhythm the origin of impulse is near AV node; a normal P wave is not seen. Sometimes, a retrograde P wave may be seen which represents atrial depolarization moving backward from the AV node into the atria.

Question No: 23

"Ashman phenomenon" is associated with which of the following arrhythmias?

- A. Atrial flutter
- B. Atrial fibrillation
- C. Paroxysmal supraventricular tachycardia
- D. Junctional tachycardia

Answer: B

Explanation: "Ashman phenomenon" is associated with atrial fibrillation. Ashman phenomena presents as wide QRS complexes due to aberrancy which may occur following a long short R-R cycle sequence.

Question No: 24

The nurse records the ECG of a patient presenting with complaints of sudden onset palpitation with ventricular rate of about 200/ minute. ECG shows paroxysmal supraventricular tachycardia. Which of the following drugs the nurse should prepare if this patient is not responding to vagal maneuvers?

- A. Digoxin
- B. Adenosine

C. Beta blocker

D. Verapamil

Answer: B

Explanation: The nurse should prepare adenosine if the patient is not responding to vagal maneuvers. Adenosine is the first choice in acute paroxysmal supraventricular tachycardia, if unresponsive to vagal maneuvers. If no response, try metoprolol, digoxin, verapamil; DC shock if signs of cardiogenic shock, angina, or CHF.

Question No: 25

Which of the following statements are true about primary Raynaud's phenomena versus secondary Raynaud's phenomena?

A. Secondary Raynaud's phenomena is an inherited condition and runs in families while primary does not

B. Secondary Raynaud's phenomena is associated with many diseases while primary Raynaud's phenomena is an inherited condition

C. Primary Raynaud's phenomena is associated with hypothyroidism and atherosclerosis but secondary Raynaud's phenomena has no such association

D. Primary Raynaud's phenomena is precipitated by cold while secondary is not

Answer: B

Explanation: The true statement about primary Raynaud's phenomena versus secondary Raynaud's phenomena is secondary Raynaud's phenomena is associated with many diseases while primary Raynaud's phenomena is an inherited condition.

Question No: 26

Which of the following is not a histopathologic finding in hypertrophic cardiomyopathy?

A. Myocardial fiber disarray

B. Fluid in the intramyocardial space

C. Myocyte hypertrophy

D. Interstitial fibrosis

Answer: B

Explanation: Fluid in the intramyocardial space is not a histopathologic finding in hypertrophic cardiomyopathy. Histopathologic findings in hypertrophic cardiomyopathy are myocardial fiber disarray, myocyte hypertrophy, and interstitial fibrosis.

Question No: 27

Which of the following is not a part of major criteria of the modified Jones criteria for diagnosis of rheumatic fever?

A. Pancarditis

B. Erythema marginatum

C. Subcutaneous nodules

D. Polyarthralgia

Answer: D

Explanation: Polyarthralgia is not a part of major criteria of the modified Jones major criteria for diagnosis of rheumatic fever. The major criteria of the modified Jones criteria includes :

- Pancarditis

- Polyarthritis
- Sydenham's chorea
- Erythema marginatum
- Subcutaneous nodules

Question No: 28

A nurse records the ECG of a patient presenting with chest pain. The ECG shows ST elevation in precordial leads. Which of the following diagnosis is unlikely?

- A. Acute myocardial infarction
- B. Acute pericarditis
- C. Subendocardial infarction
- D. Prinzmetal's angina

Answer: C

Explanation: If the ECG shows ST elevation the unlikely diagnosis is subendocardial infarction. Causes of ST segment elevation:

- Early repolarization (normal variant)
- Acute MI
- Post MI
- Prinzmetal's angina (coronary vasospasm)
- Acute pericarditis
- Ventricular aneurysm
- LBBB

Question No: 29

A patient presents with chest pain in emergency department was diagnosed to have acute myocardial infarction. What is the goal of treatment in this patient?

- A. To relieve pain
- B. To give rest to the heart
- C. To minimize the infarct and prevent complication
- D. To mobilize the patient at earliest

Answer: C

Explanation: The goal of treatment in a patient of acute myocardial infarction is to minimize the infarct and prevent complication. The goal of treatment in patients of acute myocardial infarction is to minimize the amount of infarcted myocardium and prevent complications.

Question No: 30

A 62-year male patient presents to emergency with severe acute chest pain. After looking at which of the following ECG findings, should the nurse prepare for thrombolytic therapy?

- A. 2 mm ST elevation in leads II and V1
- B. 1 mm ST elevation in leads II and V1
- C. 2 mm ST elevation in leads V1 and V2
- D. 1 mm ST depression in leads II and V1

Answer: C

Explanation: After looking at the ECG showing 2 mm ST elevation in leads V1 and V2 the nurse should prepare

for thrombolysis. Following are the indications for thrombolytic therapy for a patient presenting with acute chest pain:

- At least 0.5 hours of ischemic cardiac pain and
- Any of the following ECG changes thought to be of acute onset
- at least 1 mm of ST elevation in at least two limb leads
- at least 1 mm of ST elevation in at least two adjacent precordial leads
- new onset complete BBB
- Presentation within 12 hours of symptom onset

Question No: 31

Which one of the following is an absolute contraindication for thrombolytic therapy in acute myocardial infarction?

- A. 60 year old male presenting with new LBBB and chest pain for 1 hour with ST elevation in V4, V5, and V6
- B. 40 year old lady with chest pain, ST elevation in lead V3, V4, V5 who underwent cholecystectomy 2 weeks ago
- C. 70 year old hypertensive male with acute chest pain, ST elevation in leads II, III and aVF and a new diastolic murmur in the left lower sternal region
- D. ST elevation in leads V1, V2, V3 with a blood pressure of 180/100 easily controlled with antihypertensive medications

Answer: C

Explanation: Aortic dissection is the absolute contraindication for thrombolytic therapy which is the likely diagnosis in a 70-year old hypertensive male with acute chest pain, ST elevation in leads II, III and aVF and new diastolic murmur in the left lower sternal region.

Question No: 32

All of the following group of drugs improve the survival in congestive heart failure as shown by many studies except

- A. Beta blockers
- B. Spironolactone
- C. ACE inhibitor
- D. Nitrates

Answer: D

Explanation: Nitrates do not improve the survival in patients of congestive heart failure. The drugs which offer mortality benefit to the patients of cardiac failure are: spironolactone, ACE inhibitor, Angiotensin receptor blocker and beta-blockers. Nitrates are used for symptom control but do not increase survival.

Question No: 33

A patient presenting to emergency room was diagnosed to have acute myocardial infarction. Which of the following measures should the nurse be prepared to take in the emergency room?

- A. Sedation, thrombolysis with streptokinase, echocardiography,
- B. ECASA 325 mg chewed stat, oxygen, sublingual nitroglycerine, morphine, sedation, venodilation and β blockers
- C. Morphine for pain relief, oxygen inhalation, endotracheal intubation
- D. ECASA 325 mg chewed stat, DC cardioversion, positive pressure ventilation

Answer: B

Explanation: The nurse should be prepared to take the following measures in emergency room are: ECASA 325 mg chewed stat, oxygen, sublingual nitroglycerine, morphine for pain relief, sedation, venodilation and β blockers to reduce heart rate if not contraindicated.

Question No: 34

In a patient of mitral stenosis which of the following is not true?

- A. Congenital mitral stenosis is rare
- B. All patients will have atrial fibrillation
- C. Malar flush may be present
- D. It is a low cardiac output state

Answer: B

Explanation: All patients with mitral stenosis will not have atrial fibrillation although about 80% patients of mitral stenosis suffer from atrial fibrillation.

Question No: 35

Which of the following is not an indication of surgery in patients with mitral stenosis?

- A. Mitral valve area
- B. Infective endocarditis
- C. Worsening pulmonary hypertension
- D. Atrial fibrillation

Answer: D

Explanation: Atrial fibrillation is not an indication of surgery in patient of mitral stenosis. The indications of surgery in mitral stenosis are: MV area <1.0 cm² with symptoms, NYHA class III or IV, worsening pulmonary hypertension, infective endocarditis, systemic embolization, unacceptable lifestyle limitations due to symptoms.

Question No: 36

Which of the following statements are not true about secondary Raynaud's phenomena?

- A. Secondary Raynaud's phenomena is associated with scleroderma, lupus, rheumatoid arthritis, eating disorders
- B. Secondary Raynaud's phenomena is a hereditary disease which runs in families
- C. Occupational hazards including exposure to vibrating equipment, vinyl chloride and cold are associated with secondary Raynaud's phenomena
- D. Reflex sympathetic dystrophy is associated with secondary Raynaud's phenomenon

Answer: B

Explanation: The statement that secondary Raynaud's phenomenon is a hereditary disease which runs in families is not true about secondary Raynaud's phenomenon. Primary Raynaud's or Raynaud's disease is typically an inherited condition, exacerbated by smoking, with a hormonal component. However, Raynaud's syndrome, or secondary Raynaud's is associated with numerous environmental factors and diseases. Those most often associated include scleroderma, lupus, rheumatoid arthritis, eating disorders, atherosclerosis, Buerger's disease, and drugs such as beta-blockers, cytotoxins, cyclosporin, ergotamine, or sulfasalazine. Additionally, occupational hazards including exposure to vibrating equipment, vinyl chloride and cold as well as other comorbid conditions like hypothyroidism, cryoglobulinemia, cancer and reflex sympathetic dystrophy

have also been associated with secondary Raynaud's phenomenon.

Question No: 37

Jones criteria are for diagnosis of which of the following diseases?

- A. Typhoid fever
- B. Rheumatic fever
- C. Yellow fever
- D. Dengue fever

Answer: B

Explanation: Jones criteria is for diagnosis of rheumatic fever. Nowadays the criteria has been modified and known as modified Jones criteria.

Modified Jones criteria:

Major criteria

- Pancarditis
- Polyarthritis
- Sydenham's chorea
- Erythema marginatum
- Subcutaneous nodules

Minor criteria

- Previous history of rheumatic fever or rheumatic heart disease
- Polyarthralgia
- Increased ESR or c-reactive protein (CRP)
- Increased pr interval (first degree heart block)
- Fever

Question No: 38

What is the overall goal of management of metabolic syndrome?

- A. To reduce the risk of developing hypertension and development of hypertrophic cardiomyopathy
- B. To reduce the risk of developing cardiovascular disease and development of type I diabetes
- C. To reduce the risk of developing cardiovascular disease and development of type II diabetes
- D. To reduce the risk of developing peripheral vascular disease and development of type II diabetes

Answer: B

Explanation: The overall goal is to reduce an individual's risk of developing cardiovascular disease and development of type II diabetes. Metabolic syndrome is a constellation of symptoms and signs that put a person at risk for developing cardiovascular and type II diabetes.

Question No: 39

Which of the following recommendations the nurse should suggest a person who has been diagnosed to have metabolic syndrome?

- A. Maintain proper lipid, blood pressure levels, glucose levels, proper urea and blood urea nitrogen levels
- B. Maintain proper lipid levels, blood pressure levels, glucose levels, maintain proper blood electrolyte levels
- C. Maintain proper lipid levels, blood pressure levels, glucose levels, and maintain proper serum calcium levels
- D. Maintain proper lipid, blood pressure, glucose levels, maintain proper albumin excretion and creatinine levels

Answer: D

Explanation: The nurse should recommend a patient of metabolic syndrome to maintain proper lipid levels, maintain proper blood pressure levels, maintain proper glucose levels, and maintain proper albumin excretion and creatinine levels. Other recommendations are to maintain proper diet and exercise, avoid smoking and tobacco use, lose excess weight,

Question No: 40

Which of the following pharmacologic agents are not used for treatment of metabolic syndrome?

- A. Lipid-lowering agents
- B. Antihypertensives
- C. Oral antidiabetic agents and insulin
- D. Antibiotics

Answer: D

Explanation: Antibiotics are not used for treatment of metabolic syndrome. Pharmacologic agents used to treat metabolic syndrome include lipid-lowering agents, antihypertensives, anticoagulants and diabetic agents such as oral agents and insulin.

Question No: 41

Which of the following set of diseases represent the co-morbid conditions associated with metabolic syndrome?

- A. Polycystic ovary syndrome, fatty liver disease, hemochromatosis
- B. Polycystic ovary syndrome, liver cirrhosis, dilated cardiomyopathy
- C. Fatty liver disease, restrictive cardiomyopathy, nephropathy
- D. Hypertensive cardiomyopathy, coronary heart disease, peripheral vascular disease

Answer: B

Explanation: Co-morbid conditions associated with metabolic syndrome include elevated uric acid levels, fatty liver disease, polycystic ovary syndrome, and hemochromatosis and acanthosis nigricans.

Question No: 42

A 32- year old male patient has been diagnosed with dyslipidemia. He is curious to know about the underlying metabolic disorder. What is the correct answer the nurse should give this patient?

- A. Dyslipidemia is a disorder of lipoprotein metabolism
- B. Dyslipidemia is a disorder of carbohydrate metabolism
- C. Dyslipidemia is a disorder of lipid metabolism
- D. Dyslipidemia is a disorder of protein metabolism

Answer: A

Explanation: Dyslipidemia is a disorder of lipoprotein metabolism, including hyperlipidemia and hypolipidemia. Dyslipidemia can be classified as primary dyslipidemia or as result of a comorbid condition and referred to as secondary dyslipidemia. The condition is typically characterized by elevations in total cholesterol, low-density lipoprotein cholesterol, triglyceride levels, and a decrease in high-density cholesterol levels.

Question No: 43

Which of the following is not a feature of dyslipidemia?

- A. Elevation in low-density lipoprotein cholesterol

- B. Elevations in total cholesterol
- C. Elevation in high-density cholesterol levels
- D. Elevation in triglyceride levels

Answer: C

Explanation: Dyslipidemia does have an elevation in high-density cholesterol levels. Dyslipidemia is typically characterized by elevations in total cholesterol, low-density lipoprotein cholesterol, triglyceride levels, and a decrease in high-density cholesterol levels.

Question No: 44

Which of the following approaches are not used for reducing triglyceride levels?

- A. Omega-3 fatty acids
- B. Antiplatelets
- C. Nicotinic acid
- D. Statins

Answer: B

Explanation: Antiplatelets are not used for reducing triglyceride levels. The approaches demonstrated to be effective in lowering triglyceride levels includes fibrates, statins, nicotinic acid, and omega-3 fatty acids.

Question No: 45

A non-diabetic non-hypertensive male presents with symptoms of discoloration of fingers and toes when exposed to cold. Which of the diagnostic tools are useful to distinguish between primary and secondary Raynaud's phenomena?

- A. Venous doppler, peripheral angiography, serum albumin and globulin
- B. Venography, handgrip exercise test, stress ECG testing
- C. Nail fold capillaroscopy, measurement of hand temperature gradients, digital artery pressure measurements, Doppler ultrasound
- D. Allen's test, color Doppler, digital artery pressure measurement

Answer: C

Explanation: The tools used to distinguish between primary and secondary Raynaud's disease are: nail fold capillaroscopy, diagnostic measurement of hand temperature gradients, digital artery pressure measurements, and doppler ultrasound. Blood counts and measurement of urea and electrolyte levels are other tools used to distinguish between primary and secondary forms of the phenomenon.

Question No: 46

The nurse records the ECG of a patient presenting with dizziness, light headedness and palpitations. The ECG shows absent p-waves and fibrillatory waves. Which of the following invasive approaches are not beneficial in treating this patient's arrhythmia?

- A. AV node ablation
- B. Dual chamber pacemaker
- C. Radiofrequency catheter ablation
- D. Surgical maze procedure

Answer: B

Explanation: A dual chamber pacemaker is not beneficial for treatment of atrial fibrillation. Invasive approaches for treatment of atrial fibrillation include AV node ablation, radiofrequency catheter ablation, and surgical

maze procedure.

Question No: 47

Which of the following statements is not true regarding cardiac arrhythmias?

- A. Arrhythmia is defined as dysregulation of cardiac electrical activity
- B. Supraventricular arrhythmias originate in the ventricle
- C. Tachycardia is a condition when the heart rate is faster than normal
- D. Bradycardia is a condition that occurs when an arrhythmia beats slower than normal

Answer: B

Explanation: The statement "Supraventricular arrhythmias originate in the ventricle". Supraventricular arrhythmias originate in the atria and include atrial fibrillation, atrial flutter, and Wolf-Parkinson-White syndrome.

Question No: 48

A child having aortic regurgitation has been advised for valve replacement surgery. The parents are concerned to know about the type of aortic valve prosthesis which is suitable for their child. What is the correct answer given by nurse?

- A. Mechanical valve
- B. Bioprosthetic valve
- C. Pulmonary autograft
- D. Aortic homograft

Answer: C

Explanation: The nurse should tell them that pulmonary autograft is suitable for their child. Pulmonary autograft valves are ideal for children and young adults to avoid anticoagulation. Ross procedure: replace the diseased aortic valve with the patient's own pulmonary valve and implant a semilunar valve homograft (e.g. pulmonary valve homograft) in the pulmonary position.

Question No: 49

A patient with atrial fibrillation is presents with acute pain in left lower limb which progressed to loss of sensation and feeling of cold and numbness over few hours. What is the first treatment the nurse should start?

- A. Prepare the patient for embolectomy
- B. Immediate heparinization
- C. Send the patient for arteriography
- D. Identify and treat the underlying cause

Answer: B

Explanation: The first treatment the nurse should start is immediate heparinization with 5000 IU bolus and continuous infusion to maintain PTT > 60. The symptoms of this patient are highly suggestive of acute arterial occlusion.

Management of acute arterial occlusion:

- Immediate heparinization at 5000 IU bolus and continuous infusion to maintain PTT > 60
- In the absence of power and sensation - need emergent re-vascularization: for embolus - embolectomy; (ii) for thrombus - bypass
- In the presence of power and sensation - need work-up - including angiogram: for embolus - embolectomy; (ii) for thrombus - bypass

- Embolectomy: Fogarty catheter tied to fish embolus out of artery
- Bypass: bypass occlusion allowing blood flow to resume to distal site
- Identify and treat underlying cause
- Continue heparin post-op, start warfarin post-op day 1 for 3 months
- Re-perfusion phenomenon
- Toxic metabolites from ischemic muscle --> renal failure and multi-organ system failure

Question No: 50

Which of the following drugs is liable to cause dilated cardiomyopathy?

- A. Adriamycin
- B. Amiodarone
- C. Atenolol
- D. Ampicillin

Answer: A

Explanation: Adriamycin is liable to cause dilated cardiomyopathy. Amiodarone, atenolol and ampicillin do not cause cardiomyopathy. Cardiomyopathy is the enlargement of the heart and is to be monitored in patients receiving Adriamycin.

Question No: 51

Dilated cardiomyopathy is not a manifestation of which of the following?

- A. Amyloidosis
- B. Coronary artery disease
- C. Alcohol consumption
- D. Hypothyroidism

Answer: A

Explanation: Dilated cardiomyopathy is not a manifestation of amyloidosis. Amyloidosis is a cause of restrictive cardiomyopathy. Coronary artery disease and alcohol cause dilated cardiomyopathy.

Question No: 52

The antibiotic used for treatment of acute streptococcal infection in patients of acute rheumatic fever is:

- A. Crystalline penicillin
- B. Benzyl penicillin
- C. Benzathine penicillin
- D. Ampicillin

Answer: C

Explanation: Benzathine penicillin (benzathine penicillin G 1.2 MU IM x 1 dose) is used for treatment of acute streptococcal infection in patients of acute rheumatic fever.

Question No: 53

Which of the following set of symptoms constitute the triad of aortic stenosis?

- A. Angina, vertigo, calf pain
- B. Angina, syncope, dyspnea
- C. Angina, vertigo, headache
- D. Angina, syncope, anasarca

Answer: B

Explanation: Triad of symptoms of aortic stenosis consists of angina, syncope, and dyspnea.

- Angina (exertional): due to concentric LVH and subendocardial ischemia (decreased subendocardial flow and increased myocardial O₂ demand), may have limitation of normal activity or resting angina in tight AS (associated with <5 year survival)
- Syncope: due to fixed CO or arrhythmia (<3 year survival)
- Dyspnea (LV failure): systolic +/- diastolic dysfunction, pulmonary edema, may have orthopnea, if secondary RHF may have ascites, peripheral edema, congestive hepatomegaly (<2 years)

Question No: 54

Which of the following criteria is not used to diagnose Buerger's disease?

- A. Individuals younger than 45 years of age
- B. Past or present tobacco use
- C. Pain in muscles on walking
- D. Presence of ischemic ulcers and gangrene in distal extremity

Answer: C

Explanation: Pain in muscles on walking is not a criterion for diagnosis of Buerger's disease. The most commonly used criteria used for the diagnosis of Buerger's disease: individuals younger than 45 years of age, past or present tobacco use, presence of distal extremity ischemia (ischemic ulcers and gangrene), exclusion of autoimmune disorders, and consistent angiographic findings in extremities.

Question No: 55

A 40-year old male patient has been diagnosed to have Buerger's disease. The nurse is explaining this patient about the available treatment options for his condition. Which of the following treatment methods should the nurse not mention to the patient?

- A. Smoking cessation
- B. Anti-coagulants
- C. Lipid-lowering agents like statins
- D. Surgery to cut nerves in infected painful areas

Answer: C

Explanation: The nurse should not mention lipid-lowering agents like statins as a treatment method in this patient. The main treatment of Buerger's disease is smoking cessation which will halt progression of the disease. Other options for the treatment of Buerger's disease include anti-coagulation agents or anti-platelet agents to improve blood flow, surgery to cut nerves in infected painful areas, as well as digit amputation due to extensive infection or gangrene.

Question No: 56

A 45-year old female patient is on warfarin therapy for atrial fibrillation. She has planned to undergo mitral valve replacement surgery for mitral stenosis and mitral regurgitation. What advice should be given by the nurse regarding the anticoagulant medication?

- A. Stop warfarin on the day of surgery
- B. Stop warfarin 4-5 days before surgery
- C. Stop warfarin 4-5 days prior to surgery; admit and start on IV heparin; stop IV heparin 2-3 hours pre-op
- D. Continue warfarin therapy

Answer: C

Explanation: The advice for patients taking anticoagulants like warfarin is to stop 4-5 days prior to surgery; admit and start on IV heparin if high risk of thrombosis (large left atrium, atrial fibrillation, mitral valve prosthesis). IV heparin should be stopped 2-3 hours preoperation (unless on intra-aortic balloon pump (IABP) support).

Question No: 57

A 65-year old male had undergone percutaneous transluminal coronary angioplasty. What tests should the nurse order to evaluate this patient of post percutaneous transluminal coronary angioplasty?

- A. Electrocardiogram, echocardiogram, hematocrit, serum creatinine
- B. Electrocardiogram, echocardiogram, cardiac enzymes
- C. Electrocardiogram, echocardiogram, physical assessment, monitoring of peripheral blood flow
- D. Physical assessment and evaluation of cardiac pain

Answer: C

Explanation: The nurse should order electrocardiogram, echocardiogram, physical assessment, and monitoring of peripheral blood flow to evaluate this patient. Post percutaneous transluminal coronary angioplasty patients should be evaluated by performing electrocardiogram, echocardiogram, physical assessment, monitoring of peripheral blood flow, any swelling and evaluation of cardiac pain.

Question No: 58

A 72-year old male patient has been diagnosed to have peripheral arterial disease. What are the contraindications of percutaneous transluminal angioplasty of the lower extremity in this patient?

- A. Hypertensive patients of poor ventricular function
- B. Patients having dyslipidemia
- C. Medically unstable, diabetic patient, long arterial occlusion, poor distal run off
- D. Patient who has undergone coronary angioplasty

Answer: C

Explanation: Contraindications of percutaneous transluminal angioplasty of the lower extremity are:

- Medically unstable patients
- Patients having long arterial occlusions
- Patients having poor distal run off
- Diabetic patients

Question No: 59

The nurse is taking care of a patient who has percutaneous transluminal angioplasty of the lower extremity. What are the possible complications the nurse should be watchful in this patient?

- A. Myocardial infarction, angina
- B. Vasospasm, thrombus formation, arterial dissection, vessel perforation, compartment syndrome, arterial dissection
- C. Aneurysmal rupture, dissection of aorta
- D. Circulatory shock, renal failure

Answer: B

Explanation: The possible complications the nurse should be watchful in this patient are vasospasm, thrombus formation, arterial dissection, vessel perforation, compartment syndrome and arterial dissection. The

complications associated with post percutaneous transluminal angioplasty of the lower extremity are vasospasm, thrombus formation, arterial dissection, vessel perforation, compartment syndrome, arterial dissection, restenosis, and sudden death. Other complications may occur due to the patient's overall health, allergies, and other comorbid conditions.

Question No: 60

Which of the following statement is correct about relationship between smoking and atherosclerosis?

- A. Smoking predisposes individuals to development of atherosclerosis
- B. Smoking not only predisposes individuals to atherosclerosis, but it increases the progression of the disease
- C. Smoking increases the progression of atherosclerosis
- D. Smoking increases the risk of individuals to develop atherosclerosis

Answer: B

Explanation: The correct statement about smoking and atherosclerosis is "smoking not only predisposes individuals to atherosclerosis, but it increases the progression of the disease". This is by the constricting effects on the arteries that smoking has.

Question No: 61

Nurse is explaining a patient about the various manifestations of atherosclerosis. Which of the following statement is not true regarding this disease?

- A. Atherosclerosis leads to altered vascular function which may result in including coronary heart disease and cause myocardial ischemia and myocardial infarction
- B. Atherosclerosis may lead to cerebrovascular insufficiency and stroke
- C. Atherosclerosis leads to altered vascular function which affects all the arteries except the renal artery and aorta
- D. Peripheral vascular disease, limb ischemia, vasculitis are also manifestation of atherosclerosis

Answer: C

Explanation: The statement not true about manifestations of atherosclerosis is "Atherosclerosis leads to altered vascular function which affects all the arteries except the renal artery and aorta". Atherosclerosis leads to altered vascular function including coronary heart disease, myocardial ischemia and myocardial infarction, cerebrovascular insufficiency, stroke, peripheral vascular disease, limb ischemia, renal disease, aortic aneurysm, and vasculitis. The final mechanism of the above complications usually occurs via plaque rupture or severe vessel narrowing and blood clotting.

Question No: 62

Which of the following is a correctly matched correlation of jugular venous pulse?

- A. Loss of "a" wave: atrial fibrillation
- B. Slow "y" descent: constrictive pericarditis
- C. Giant "a" waves: tricuspid regurgitation
- D. Sharp "y" descent: mitral valve prolapse

Answer: A

Explanation: The correct match is loss of "a" wave: atrial fibrillation.

Pathological waveforms of JVP:

- Loss of "a" wave: A fib, atrial standstill
- Absent venous pulse: RHF/CHF, SVC obstruction, cardiac tamponade