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Question: 640

A 62-year-old female with tricuspid regurgitation presents with ascites and peripheral edema. Echocardiogram shows a regurgitant volume of 50 mL and right atrial enlargement. What is the most appropriate management?

- A. Watchful waiting
- B. Surgical valve repair
- C. Transcatheter valve replacement
- D. Diuretic therapy

Answer: D

Explanation: Symptomatic tricuspid regurgitation with right heart failure (ascites, edema) is initially managed with diuretics to reduce volume overload. Surgical or transcatheter repair is considered for severe, refractory cases. Watchful waiting is inappropriate for symptomatic patients.

Question: 641

A 52-year-old male with a history of cocaine use presents with chest pain and ST elevation in leads V1-V3. His BP is 160/90 mm Hg, and troponin is 4.5 ng/mL. Coronary angiography shows no obstructive lesions. The MOST LIKELY diagnosis is:

- A. Myocarditis
- B. Coronary artery spasm
- C. Pericarditis
- D. Takotsubo cardiomyopathy

Answer: B

Explanation: Cocaine-induced chest pain with ST elevation and non-obstructive coronaries suggests coronary artery spasm (Prinzmetal angina). Myocarditis may cause troponin elevation but not focal ST elevation. Pericarditis typically shows diffuse ST elevation. Takotsubo cardiomyopathy presents with apical ballooning, not seen here. Calcium channel blockers are the treatment of choice.

Question: 642

A 59-year-old female undergoes a stress echocardiogram with no wall motion abnormalities at rest or stress. Her blood pressure rises from 120/80 to 200/100 mmHg at peak stress. What is the most likely diagnosis?

- A. Coronary artery disease

- B. Normal stress response
- C. Left ventricular hypertrophy
- D. Hypertensive response to exercise

Answer: D

Explanation: An exaggerated blood pressure rise to 200/100 mmHg without wall motion abnormalities suggests a Hypertensive response to exercise, common in patients with underlying hypertension. Coronary artery disease would show wall motion abnormalities. Left ventricular hypertrophy requires echocardiographic confirmation. Normal stress response has a BP rise <190/90 mmHg.

Question: 643

A 55-year-old female with a history of rheumatic heart disease presents with atrial fibrillation and a mitral valve area of 1.2 cm² on echocardiogram. Her BP is 110/70 mmHg, and HR is 140 bpm. What is the most appropriate intervention?

- A. Perform electrical cardioversion
- B. Start heparin and warfarin
- C. Administer metoprolol 5 mg IV
- D. Initiate amiodarone 150 mg IV

Answer: C

Explanation: Mitral stenosis with atrial fibrillation and rapid ventricular rate requires rate control to improve diastolic filling. Metoprolol IV is appropriate for acute rate control. Anticoagulation is needed long-term but not immediately, cardioversion is risky without prior anticoagulation, and amiodarone is for rhythm control.

Question: 644

A 58-year-old male with acute limb ischemia undergoes CDT for a popliteal artery occlusion. Post-procedure, angiography shows incomplete thrombolysis with residual thrombus. What is the most appropriate next step?

- A. Continue CDT for an additional 24 hours
- B. Perform mechanical thrombectomy
- C. Start systemic anticoagulation alone
- D. Switch to surgical embolectomy

Answer: B

Explanation: Incomplete thrombolysis with residual thrombus after CDT warrants mechanical thrombectomy to rapidly restore vessel patency and prevent limb loss. Continuing CDT for an additional 24 hours increases bleeding risk without guaranteed success. Systemic anticoagulation alone is

insufficient for significant residual thrombus. Surgical embolectomy is more invasive and typically reserved for CDT failure in specific scenarios.

Question: 645

A 70-year-old male presents with chest pressure and shortness of breath for 2 hours. ECG shows no ST-elevation, but troponin I is 1.2 ng/mL. He is started on aspirin 325 mg and ticagrelor 180 mg. His GRACE score is 140, indicating high risk. What is the NEXT best step in management?

- A. Arrange for coronary angiography within 24 hours
- B. Administer IV morphine 4 mg for pain relief
- C. Perform a nuclear stress test
- D. Start IV nitroglycerin infusion

Answer: A

Explanation: The patient has NSTEMI (elevated troponin, no ST-elevation) and a high-risk GRACE score (>130), indicating a high likelihood of adverse cardiac events. AHA/ACC guidelines recommend early invasive strategy (coronary angiography within 24-72 hours) for high-risk NSTEMI patients. Morphine is used for pain but is not the next priority. A nuclear stress test is inappropriate in acute NSTEMI. Nitroglycerin infusion is indicated for ongoing ischemia but not the next step over angiography.

Question: 646

A 71-year-old female with heart failure is on lisinopril and develops a persistent dry cough. What is the most likely cause, and what should the nurse anticipate?

- A. Allergic reaction; administer antihistamine
- B. Angioedema; discontinue lisinopril
- C. Worsening heart failure; increase lisinopril
- D. Bradykinin accumulation; switch to ARB

Answer: D

Explanation: Lisinopril, an ACE inhibitor, can cause a dry cough due to bradykinin accumulation. The nurse should anticipate switching to an ARB (e.g., losartan), which has a lower incidence of cough. An allergic reaction is less likely without systemic symptoms. Angioedema is a severe side effect but typically involves swelling, not cough. Worsening heart failure is unrelated to cough.

Question: 647

A 63-year-old male with acute arterial occlusion undergoes thrombolysis. Post-procedure, his CK rises to 4,000 U/L, and serum myoglobin is 500 ng/mL. Urine dipstick is positive for blood, but microscopy shows no RBCs. What is the most appropriate treatment?

- A. Administer furosemide 40 mg IV
- B. Transfuse packed RBCs
- C. Start dialysis immediately
- D. Initiate IV hydration with sodium bicarbonate

Answer: D

Explanation: Elevated CK, myoglobin, and urine dipstick positive for blood without RBCs indicate rhabdomyolysis, likely from reperfusion injury. Initiate IV hydration with sodium bicarbonate alkalinizes urine to prevent myoglobin-induced renal damage. Administer furosemide 40 mg IV is not indicated as it may worsen dehydration. Start dialysis immediately is premature without evidence of severe renal failure. Transfuse packed RBCs is irrelevant to rhabdomyolysis management.

Question: 648

A 55-year-old female with pulmonary edema is on BiPAP with IPAP 14 cmH₂O and EPAP 6 cmH₂O. Her SpO₂ is 88%, and ABG shows pH 7.30, PaCO₂ 50 mmHg, PaO₂ 60 mmHg. What is the most appropriate adjustment?

- A. Increase EPAP to 8 cmH₂O
- B. Start furosemide 40 mg IV
- C. Intubate and initiate mechanical ventilation
- D. Increase IPAP to 18 cmH₂O

Answer: D

Explanation: Hypoxemia and hypercapnia on BiPAP suggest inadequate ventilation and oxygenation. Increasing IPAP improves tidal volume and CO₂ clearance. Increasing EPAP may help oxygenation but not hypercapnia. Intubation is premature without optimizing BiPAP. Furosemide addresses volume but not immediate ventilatory needs.

Question: 649

A 57-year-old female presents with BP 210/125 mmHg and seizures. Labs show creatinine 2.5 mg/dL and lactate 3.5 mmol/L (normal <2). What is the most appropriate initial treatment?

- A. IV lorazepam
- B. IV labetalol
- C. IV nicardipine
- D. Oral clonidine

Answer: A

Explanation: The patient has a hypertensive emergency with seizures, indicating hypertensive encephalopathy. IV lorazepam is the priority to control seizures and prevent further neurologic damage. IV nicardipine or labetalol can follow for BP control, but seizure management is urgent. Oral clonidine is

inappropriate for acute management.

Question: 650

A 50-year-old patient with hypertrophic cardiomyopathy presents with syncope and chest pain. ECG shows left ventricular hypertrophy and Q waves in inferior leads. BP is 100/60 mm Hg, HR 90 bpm, CO 3.5 L/min. The patient is started on metoprolol. What is the MOST appropriate additional therapy?

- A. Initiate IV nitroprusside
- B. Start amiodarone infusion
- C. Administer IV fluids 1 L bolus
- D. Begin verapamil therapy

Answer: D

Explanation: In hypertrophic cardiomyopathy, syncope and chest pain result from left ventricular outflow tract obstruction. Metoprolol reduces heart rate and contractility, but verapamil (a non-dihydropyridine calcium channel blocker) is often added to further reduce obstruction and improve diastolic filling. Nitroprusside worsens obstruction by reducing afterload. Amiodarone is used for arrhythmias, not obstruction. IV fluids are not indicated without hypovolemia.

Question: 651

A 59-year-old male with an LVAD presents with a pump flow of 2.8 L/min, power of 7.2 W, and PI of 1.5. Labs show INR 2.2, LDH 1400 U/L, and hemoglobin 6.5 g/dL. What is the most appropriate next step?

- A. Administer IV fluids
- B. Perform urgent pump exchange
- C. Initiate heparin therapy
- D. Transfuse packed red blood cells

Answer: C

Explanation: Low flow (2.8 L/min), high power (7.2 W), low PI (1.5), and elevated LDH (1400 U/L) indicate pump thrombosis, causing hemolysis and anemia. Heparin therapy is the most appropriate initial step to address thrombosis while maintaining anticoagulation (INR 2.2 is borderline). Fluids or transfusion may be supportive but do not address the underlying issue. Pump exchange is considered if medical therapy fails.

Question: 652

A 75-year-old patient with chronic kidney disease (GFR 25 mL/min) and heart failure presents with pulmonary edema. Hemodynamics: BP 140/90 mm Hg, HR 100 bpm, CI 2.2 L/min/m², PAOP 30 mm Hg. Serum potassium is 5.8 mEq/L. What is the MOST appropriate initial therapy?

- A. Administer IV furosemide 80 mg
- B. Perform urgent hemodialysis
- C. Initiate dobutamine infusion
- D. Start nitroprusside infusion

Answer: B

Explanation: The patient has pulmonary edema (PAOP 30 mm Hg) and hyperkalemia (potassium 5.8 mEq/L) with severe CKD (GFR 25 mL/min). Urgent hemodialysis is the most appropriate to address fluid overload and hyperkalemia, as diuretics (furosemide, A) are less effective in advanced CKD. Nitroprusside risks hypotension, and dobutamine doesn't address volume or potassium.

Question: 653

A 65-year-old male undergoes ablation for atrial fibrillation. Post-procedure, he develops neurological deficits. CT scan confirms an embolic stroke. What is the most likely procedural complication?

- A. Air embolism during ablation
- B. Left atrial thrombus dislodgement
- C. Pericardial effusion
- D. Pulmonary vein stenosis

Answer: B

Explanation: Neurological deficits and embolic stroke post-atrial fibrillation ablation are most likely due to Left atrial thrombus dislodgement, a known complication of left-sided ablation procedures. Air embolism during ablation could cause stroke but is less common with proper technique. Pericardial effusion presents with hemodynamic instability, not neurological deficits. Pulmonary vein stenosis causes pulmonary symptoms, not stroke.

Question: 654

A 65-year-old patient with a history of MI presents with chest pain and ECG showing new Q waves in leads V1-V3. Hemodynamics: BP 90/60 mm Hg, HR 100 bpm, CI 1.8 L/min/m², PAOP 25 mm Hg. Echocardiogram shows anterior wall akinesis. What is the MOST LIKELY complication?

- A. Ventricular septal defect
- B. Papillary muscle rupture
- C. Cardiac tamponade
- D. Ventricular aneurysm

Answer: D

Explanation: New Q waves in V1-V3, anterior wall akinesis, and heart failure (PAOP 25 mm Hg, CI 1.8 L/min/m²) post-MI suggest a ventricular aneurysm, a late complication causing wall motion abnormalities and reduced cardiac output. Papillary muscle rupture presents with acute mitral regurgitation and a

murmur. Tamponade shows pericardial effusion. VSD elevates PAP and PAOP equally.

Question: 655

A 68-year-old male presents to the cardiac ICU post-myocardial infarction (MI) with a 12-lead ECG showing ST-elevation in leads V1-V4 and a left ventricular ejection fraction (LVEF) of 30%. He develops hypotension (BP 85/50 mmHg) and tachycardia (HR 120 bpm). A pulmonary artery catheter reveals a cardiac index (CI) of 1.8 L/min/m² and a pulmonary capillary wedge pressure (PCWP) of 22 mmHg. Which intervention is most appropriate?

- A. Start intra-aortic balloon pump (IABP) counterpulsation at 1:1 ratio
- B. Initiate norepinephrine 0.01 mcg/kg/min to maintain MAP > 65 mmHg
- C. Administer dobutamine 5 mcg/kg/min and titrate to a CI > 2.2 L/min/m²
- D. Bolus 500 mL normal saline over 15 minutes to increase preload

Answer: C

Explanation: The patient is in cardiogenic shock post-MI, as indicated by hypotension, tachycardia, low CI (<2.2 L/min/m²), and elevated PCWP (>18 mmHg), suggesting left ventricular dysfunction. Dobutamine, an inotrope, improves cardiac contractility and output, targeting a CI > 2.2 L/min/m². Norepinephrine is less effective for cardiogenic shock as it primarily increases afterload. IABP may be considered but is not first-line without further deterioration. Fluid bolus is contraindicated due to elevated PCWP, indicating adequate or excessive preload.

Question: 656

A 62-year-old patient with acute decompensated heart failure (ADHF) presents with severe dyspnea and hypoxemia. An arterial blood gas (ABG) is drawn while the patient is on 4 L/min nasal cannula oxygen. The results show pH 7.32, PaCO₂ 48 mmHg, PaO₂ 65 mmHg, HCO₃⁻ 24 mEq/L. What is the most appropriate interpretation of this ABG?

- A. Compensated metabolic acidosis
- B. Uncompensated respiratory acidosis
- C. Uncompensated metabolic acidosis
- D. Compensated respiratory acidosis

Answer: B

Explanation: The ABG results indicate a pH of 7.32 (below normal range of 7.35–7.45), suggesting acidosis. The PaCO₂ is 48 mmHg (elevated, normal 35–45 mmHg), indicating a respiratory cause of acidosis due to hypoventilation, likely from pulmonary edema in ADHF. The HCO₃⁻ is 24 mEq/L (normal 22–26 mEq/L), showing no significant compensation. Thus, this is uncompensated respiratory acidosis. Compensated respiratory acidosis would show an elevated HCO₃⁻ to normalize pH, while metabolic acidosis would involve a low HCO₃⁻. Uncompensated metabolic acidosis is ruled out due to normal HCO₃⁻ and elevated PaCO₂.

Question: 657

A 67-year-old male with a history of CABG develops fever and hypotension (BP 80/50 mm Hg) 96 hours post-op. His WBC is 20,000/ μ L, lactate 4.2 mmol/L, CVP 8 mm Hg, CO 7.0 L/min. The MOST appropriate next action is:

- A. Start norepinephrine 0.1 mcg/kg/min
- B. Administer a 1 L fluid bolus
- C. Initiate broad-spectrum antibiotics
- D. Order a TEE for endocarditis

Answer: C

Explanation: Fever, hypotension, and high CO with elevated lactate suggest septic shock, likely from a postoperative infection. Broad-spectrum antibiotics are the priority to address the source, per Surviving Sepsis guidelines. Norepinephrine and fluids are supportive, but antibiotics are critical. TEE is premature without specific endocarditis signs.

Question: 658

A 45-year-old female presents with cardiac tamponade and undergoes pericardiocentesis. During the procedure, 500 mL of serous fluid is removed, and the intrapericardial pressure drops from 20 mmHg to 5 mmHg. Post-procedure, the patient's blood pressure is 90/60 mmHg, and echocardiography shows a small residual effusion. What is the most critical next step?

- A. Perform repeat pericardiocentesis
- B. Initiate dobutamine for inotropic support
- C. Administer IV fluids to increase preload
- D. Start heparin to prevent clot formation

Answer: C

Explanation: Post-pericardiocentesis, the patient's hypotension (90/60 mmHg) suggests inadequate preload due to rapid fluid removal or underlying cardiac dysfunction. Administering IV fluids to increase preload is the most critical step to stabilize hemodynamics. Dobutamine may be considered if contractility is impaired, but there's no evidence of this yet. Repeat pericardiocentesis is unnecessary with only a small residual effusion and normalized intrapericardial pressure. Heparin is contraindicated in the acute setting due to bleeding risk.

Question: 659

A 72-year-old female with a history of pulmonary hypertension is admitted with right heart failure. Her pulmonary artery pressure is 60/30 mmHg, and right atrial pressure is 15 mmHg. Which medication is most appropriate?

- A. Furosemide 40 mg IV

- B. Sildenafil 20 mg orally three times daily
- C. Dobutamine 5 mcg/kg/min
- D. Nitroglycerin 10 mcg/min IV

Answer: B

Explanation: Sildenafil, a phosphodiesterase-5 inhibitor, reduces pulmonary vascular resistance in pulmonary hypertension, improving right heart function. Furosemide addresses fluid overload but not pulmonary hypertension, dobutamine is for cardiogenic shock, and nitroglycerin may worsen hypotension.





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