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PRACTICE QUESTIONS

CFPC - The College of Family Physicians of Canada / Le Collège des médecins de famille du Canada

EMF

L'Examen de compétence additionnelle en médecine d'urgence

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for CFPC - The College of Family Physicians of Canada / Le Collège des médecins de famille du Canada **EMF**, each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

If something looks wrong

Send us three things and we will check it:

- the exam code, **EMF**
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

QUESTION 1

SINGLE CHOICE

A 62-year-old man presents to the emergency department with crushing substernal chest pain radiating to the jaw, associated with diaphoresis and shortness of breath that began 45 minutes ago. His ECG shows 3 mm of ST-segment elevation in leads II, III, and aVF. His blood pressure is 88/60 mmHg, heart rate 52 beats/min, and he has cool, clammy extremities. Which is the most appropriate immediate management?

- ☐ A Administer sublingual nitroglycerin and reassess in 10 minutes
- ☐ B Give intravenous morphine, oxygen, and nitroglycerin, then re-evaluate
- ☒ C Activate the cath lab for primary percutaneous coronary intervention and give intravenous fluid bolus
- ☐ D Administer fibrinolytics immediately because PCI is unavailable within 120 minutes

ANSWER C

WHY The patient has an inferior ST-elevation myocardial infarction (STEMI) with right ventricular involvement suggested by hypotension and bradycardia. The priority is reperfusion therapy with primary PCI when available within 90 minutes of first medical contact. Nitroglycerin should be avoided in inferior MI with hypotension because it can worsen bradycardia and hypotension. Morphine may be considered after reperfusion strategy is activated. Fibrinolytics would only be appropriate if PCI were not available within 120 minutes, which is not stated here. IV fluid bolus is appropriate for suspected RV infarct.

QUESTION 2

SINGLE CHOICE

A 45-year-old woman with a history of poorly controlled diabetes presents with fever, confusion, and a diffuse macular rash with subsequent desquamation. Blood pressure is 78/40 mmHg, heart rate 128 beats/min, temperature 39.8°C. After drawing cultures, what is the most appropriate initial fluid resuscitation strategy?

- ☐ A Begin a dopamine infusion at 10 mcg/kg/min
- ☒ B Infuse 30 mL/kg of isotonic crystalloid within the first hour
- ☐ C Administer 250 mL of 5% albumin over 30 minutes
- ☐ D Give 20 mL/kg of half-normal saline over the first 4 hours

ANSWER B

WHY The clinical picture (fever, hypotension, confusion, desquamating rash in a diabetic) is consistent with toxic shock syndrome and septic shock. Surviving Sepsis Campaign guidelines recommend rapid administration of 30 mL/kg crystalloid within the first 3 hours for patients with septic shock. Vasoactive agents such as norepinephrine (not dopamine, which is no longer first-line) are added if hypotension persists after fluid resuscitation. Half-normal saline is inappropriate for initial resuscitation. Albumin is not first-line.

QUESTION 3

SINGLE CHOICE

An 80-kg adult with severe head injury and a Glasgow Coma Scale of 3 is being prepared for rapid sequence intubation. Which combination of induction agent and paralytic is most appropriate?

- ☐ A Etomidate 30 mg IV and succinylcholine 160 mg IV
- ☒ B Ketamine 200 mg IV and rocuronium 100 mg IV
- ☐ C Midazolam 10 mg IV and vecuronium 10 mg IV
- ☐ D Propofol 200 mg IV and cisatracurium 20 mg IV

ANSWER B

WHY For a patient with severe head injury, ketamine is increasingly preferred over etomidate because it maintains cerebral perfusion pressure and does not cause adrenal suppression; rocuronium at 1 mg/kg provides rapid-onset paralysis of similar onset to succinylcholine without the risk of hyperkalemia in patients with prolonged immobilization or unknown neurological status. Etomidate/succinylcholine was historically used but concerns about adrenal suppression in sepsis/critically ill patients make ketamine/rocuronium the preferred modern pairing. The doses given for midazolam/vecuronium and propofol/cisatracurium are either excessive or too slow in onset for RSI.

QUESTION 4

SINGLE CHOICE

A 35-year-old woman is brought to the emergency department 2 hours after ingesting an unknown amount of sustained-release diltiazem in a suicide attempt. She is bradycardia at 42 beats/min with a blood pressure of 70/40 mmHg and altered mental status. Which intervention is most likely to be effective?

- ☐ A Activated the IV and whole bowel irrigation
- ☒ B Administer 10% calcium chloride 10 mL IV
- ☐ C Give 2 mg of IV glucagon followed by a continuous infusion
- ☐ D Perform transcutaneous pacing and start a norepinephrine infusion

ANSWER B

WHY Calcium channel blocker overdose from diltiazem is treated with IV calcium (10% calcium chloride 10 mL IV, or 10% calcium gluconate 30 mL IV) to overcome the receptor blockade. High-dose insulin/euglycemia therapy and vasopressors may also be needed. Glucagon is used for beta-blocker overdose, not calcium channel blocker. Whole bowel irrigation may be considered for sustained-release ingestions but does not address the immediate cardiovascular collapse. Pacing may be unsuccessful because the AV node is blocked at the cellular level.

QUESTION 5

SINGLE CHOICE

A 27-year-old woman develops sudden tongue swelling, hoarseness, and wheezing 10 minutes after receiving an IV antibiotic. Her blood pressure is 82/50 mmHg. Which is the most appropriate first-line emergency intervention?

- ☐ A Nebulized racemic epinephrine 0.5 mL
- ☒ B Intramuscular epinephrine 0.5 mg (1:0) into the anterolateral thigh
- ☐ C IV diphenhydramine 50 mg and hydrocortisone 200 mg
- ☐ D IV epinephrine 0.1 mg (1:100,000) slow push over 5 minutes

ANSWER B

WHY Anaphylaxis with cardiovascular collapse requires immediate IM epinephrine 0.5 mg (1:1000) into the anterolateral thigh, repeated every 5–15 minutes as needed. IV epinephrine is reserved for cardiovascular collapse refractory to IM epinephrine because of the risk of arrhythmias. Nebulized racemic epinephrine may be an adjunct for upper airway edema but does not address hypotension. Antihistamines and steroids are second-line and should never delay epinephrine.

QUESTION 6

SINGLE CHOICE

A 22-year-old man is brought in after a high-speed motorcycle collision. His left lower extremity is deformed, swollen, and tense, with pain out of proportion to the visible injury and pain on passive stretch of the toes. Distal pulses are present. Which is the most appropriate next step?

- ☐ A Apply a rigid splint and arrange orthopedic follow-up in 48 hours
- ☐ B Perform immediate closed reduction under sedation in the emergency department
- ☒ C Obtain urgent orthopedic consultation for fasciotomy
- ☐ D Order a venous Doppler ultrasound to rule out deep vein thrombosis

ANSWER C

WHY Pain out of proportion to injury, pain on passive stretch, and a tense compartment are classic findings of acute compartment syndrome. Pulses may still be present, and their absence is a late finding. The definitive treatment is emergent fasciotomy, ideally within 6 hours. DVT ultrasound would delay definitive treatment and is not indicated as the priority. Closed reduction is appropriate for a deformed fracture but does not address compartment syndrome.

QUESTION 7

SINGLE CHOICE

A 70-year-old woman develops sudden left-sided weakness, slurred speech, and right gaze deviation 90 minutes before arrival. CT of the head shows no hemorrhage or early ischemic changes. Her blood pressure is 178/95 mmHg and she is in normal sinus rhythm. Which is the most appropriate next step?

- ☐ A Administer labetalol to reduce blood pressure to below 140/90 mmHg before thrombolysis
- ☒ B Initiate intravenous alteplase after obtaining consent and ruling out contraindications
- ☐ C Perform CT angiography and treat with tenecteplase if a large vessel occlusion is found
- ☐ D Start therapeutic-dose low molecular weight heparin and admit to stroke unit

ANSWER B

WHY The patient is within the 3–4.5 hour window for IV thrombolysis with no contraindications on non-contrast CT. Alteplase (or tenecteplase, which is now used in many centres including Canadian centres) is indicated. Blood pressure up to 185/110 mmHg does not require treatment before thrombolysis but must be brought under 185/110 mmHg after the bolus. Aggressive BP reduction is contraindicated because it can worsen the ischemic penumbra. Heparin is not indicated in acute ischemic stroke and increases bleeding risk.

QUESTION 8

TRUE FALSE

In an adult with monitored ventricular fibrillation cardiac arrest refractory to two shocks, the next priority before the third defibrillation attempt is to administer epinephrine 1 mg IV and to deliver chest compressions for 2 minutes.

- ☒ A True
- ☐ B False

ANSWER A

WHY True. According to current ACLS guidelines, after the second defibrillation attempt for refractory ventricular fibrillation or pulseless ventricular tachycardia, epinephrine 1 mg IV/IO is administered every 3–5 minutes, chest compressions are resumed for 2 minutes, and the rhythm is reassessed at the next rhythm check before delivering another shock. Antiarrhythmics such as amiodarone or lidocaine are also considered at this stage.

QUESTION 9

SINGLE CHOICE

A 58-year-old man with a history of hypertension and dyslipidemia presents with 40 minutes of substernal chest pressure radiating to the left arm, associated with diaphoresis and nausea. His ECG shows 2 mm of ST-segment elevation in leads II, III, and aVF. Heart rate is 52/min and blood pressure is 88/56 mmHg. In addition to aspirin, sublingual nitroglycerin, and preparation for reperfusion therapy, which intervention is the most appropriate immediate next step?

- ☒ **A** Administer intravenous normal saline bolus
- ☐ **B** Give atropine 0.5 mg IV
- ☐ **C** Administer intravenous metoprolol
- ☐ **D** Perform synchronized cardioversion

ANSWER A

WHY This patient has an inferior STEMI with right ventricular involvement suggested by hypotension and bradycardia. Nitrates and beta-blockers should be avoided because they worsen RV preload and can precipitate severe hypotension. The immediate management is IV fluid resuscitation with normal saline to restore RV preload, along with aspirin and reperfusion. Atropine is reserved for symptomatic bradycardia after fluid resuscitation fails. Cardioversion is not indicated as the patient is in sinus rhythm.