

Database of questions for the Medical Final Examination (LEK)

Part 2

Emergency medicine, Intensive therapy

Modified 15.12.2023

No 1. Among the following doses of drugs used routinely in cardiac arrest, the standard ones include the administration by IV injection or intramedullary of:

- 1) adrenaline – 1 mg.
- 2) vasopressin – 120 IU.
- 3) atropine – 5 mg.
- 4) amiodarone – 300 mg.
- 5) lidocaine 1-1.5 mg / kg.
- 6) sodium bicarbonate – 80 mEq / kg bw.

The correct answer is:

A. 1,2,5,6. **B.** 1,3,4,5. **C.** 1,4,5. **D.** 2,4,5,6. **E.** 1,2,3,4,6.

No 2. Indicate the false statement regarding post-traumatic cardiac arrest (SCA):

- A.** pneumothorax or cardiac tamponade may be the cause of post-traumatic circulatory arrest.
- B.** thoracic or abdominal haemorrhage may be the cause of post-traumatic cardiac arrest (SCA).
- C.** if SCA induced by post-traumatic haemorrhage within the thorax is suspected, instead of cardiopulmonary resuscitation (CPR), immediate thoracotomy is recommended.
- D.** in the case of SCA due to an injury to the neck area, to open the airways, Esmarch's maneuver should be performed, in the first instance.
- E.** in the case of post-traumatic SCA, closed-chest cardiopulmonary resuscitation is usually ineffective.

No 3. If diagnostic and therapeutic procedures aimed at: monitoring the concentration of serum electrolytes and glucose, preventing the recurrence of disorders, protection of the heart muscle, shift of potassium ions to cells, removing potassium from the body, are necessary, which of the following should be considered?

- A.** hypokalaemia.
- B.** hyperkalaemia.
- C.** hypocalcaemia.
- D.** hypercalcaemia.
- E.** hypomagnesemia.

No 4. Indicate the complications of a blind naso-tracheal intubation in a head trauma patient admitted to the A&E:

- 1) hypoxia.
- 2) epistaxis.
- 3) oesophageal perforation.
- 4) sinusitis.
- 5) vocal cords detachment.
- 6) intussusception of the uncus of the hippocampal gyrus.

The correct answer is:

A. 1,2,3,4. **B.** 1,2,3,5. **C.** 2,4,5,6. **D.** 3,4,5. **E.** all of the above.

No 5. Which formula, according to ERC used to select the endotracheal tube size for people from 2 years of age to the age of puberty, is correct:

- A. tube size = (age in years + 16) divided by 4.
- B. tube size = (age in years + 16) divided by 3.
- C. tube size = (age in years + 14) divided by 4.
- D. tube size = (age in years + 14) divided by 3.
- E. none of the above-mentioned distractors presents the correct formula.

No 6. The probability of ventilation difficulties with the use of a bag valve mask is increased in the case of:

- 1) excessive facial hair.
- 2) severe facial burns.
- 3) giant obesity.
- 4) unstable facial bone fractures.
- 5) vitiligo.

The correct answer is:

- A. 1,2,3,4.
- B. 1,2,3,5.
- C. 2,4,5.
- D. 2,3,5.
- E. 1,3,4,5.

No 7. Please, match the following categories of shock to the diagnoses of medical conditions.

- | | |
|--------------------|---------------------------|
| 1) hypovolemic | a) adrenal insufficiency. |
| 2) cardiogenic | b) cardiac tamponade. |
| 3) distribution | c) cardiomyopathy. |
| 4) obstructive | d) sepsis. |
| 5) toxic/metabolic | e) diabetic ketoacidosis. |

The correct answer is:

- A. 1a,2b,3d,4c,5e.
- B. 1e,2b,3d,4a,5c.
- C. 1e,2c,3d,4b,5a.
- D. 1d,2c,3a,4e,5b.
- E. 1a,2b,3e,4d,5c.

No 8. Indicate the false statement regarding the use of ultrasound abdominal examination in the A&E:

- A. the main objective of abdominal ultrasound examination after injury is to detect free fluid in the peritoneal cavity.
- B. ultrasound sensitivity in intraperitoneal hematoma detection has been shown to be 83-90%.
- C. ultrasound examination is very useful for assessing the amount of fluid inside the peritoneal cavity.
- D. after abdominal injury, the presence of clotted blood may give a false negative result.
- E. a false positive result imitating the presence of intraperitoneal hematoma may occur in ascites.

No 9. The so-called alarming symptoms ("red flag symptoms") in a patient's history that should alert the doctor that there is a possibility of using violence against an elderly person include:

- 1) delay in reporting an injury.
- 2) unclear or implausible explanation of an injury.
- 3) repeated injuries.
- 4) missing scheduled appointments and non-compliance with recommendations for taking medicines.
- 5) no caregiver in the A&E who would accompany a patient with various disorders.

The correct answer is:

- A. 1,2,3.
- B. 1,2,4.
- C. 2,4,5.
- D. 3,5.
- E. all of the above.

No 10. On admission to the A&E, a patient was diagnosed with sudden, severe, excruciating chest pain, located retrosternally, radiating to the interscapular area, of a permanent nature, accompanied by dyspnoea, nausea and profuse sweating. The clinical picture most probably indicates a suspicion of:

- A. myocardial infarction.
- B. aortic dissection.
- C. pulmonary embolism.
- D. pericarditis.
- E. esophageal rupture.

No 11. Which of the following **is not used** in the treatment of hyperkalaemia?

- 1) 10% potassium gluconate.
- 2) salbutamol.
- 3) glucose with insulin.
- 4) calcium bicarbonate.
- 5) sodium polystyrene sulfonate.
- 6) haemodialysis.

The correct answer is:

- A. 1,2. B. 1,4. C. 2,3. D. 2,5. E. 4,6.

Nr 12. Indicate **the false** statement regarding the administration of fluids and electrolytes in the A&E:

- A. an increased anion gap may indicate the presence of a serious disease or an overdose of a substance.
- B. large amounts of saline may cause hyperchloremic metabolic acidosis.
- C. serum sodium concentration should not be increased at a rate greater than 0.5 mEq/L per hour or by more than 10-12 mEq/L per day.
- D. twitching, coma and newly emerging neurological symptoms in a previously healthy patient are contraindications to the administration of hypertonic sodium chloride solution in people with significant hyponatraemia.
- E. treatment of hypercalcaemia consists in induction of diuresis with sodium chloride solution, which is carefully supplemented with furosemide.

No 13. Indicate the complications of diabetic ketoacidosis therapy in the Accident and Emergency department:

- 1) hypoglycaemia.
- 2) hyperglycaemia.
- 3) hypokalaemia.
- 4) hyperphosphataemia.
- 5) acute respiratory distress syndrome /ARDS/.
- 6) brain oedema.

The correct answer is:

- A. 1,3,4. B. 2,3,4. C. 4,5,6. D. 1,3,5,6. E. 2,4,5,6.

No 14. Indicate **the false** statements regarding the treatment of adrenal crisis in the A&E department:

- A. adrenal crisis should be considered in all patients with symptoms of hypotension, especially if they do not respond to pressor amines.
- B. all patients with adrenal crisis require rapid intravenous glucocorticosteroid administration.
- C. in adrenal crisis dexamethasone administration cannot be initiated because of concerns about its effect on cosyntropin stimulation tests.
- D. already two weeks of high-dose glucocorticosteroid use may cause suppression of adrenal cortex function, which makes the patient susceptible to adrenal crisis.
- E. none of the above.

No 22. A 21-year-old male patient reports to the Accident and Emergency Department with ankle pain after a sprain injury. According to the Ottawa Ankle Rules, the patient's qualification for an X-ray of the ankle is based on:

- 1) swelling around the lateral ankle.
- 2) massive swelling around the joint.
- 3) tenderness at the posterior edge of the lateral ankle.
- 4) pain and inability to bear weight on the limb and joint.
- 5) presence of bruising on the lateral side of the foot at its base.

The correct answer is:

- A.** only 4. **B.** 1,3. **C.** 1,2,5. **D.** only 5. **E.** 2,3,5

No 23. A 52-year-old male patient and of 80 kg body weight, staying in the Accident and Emergency Department suddenly lost consciousness. Capillary blood glucose level – 31 mg/dL was measured, based on previous medical history.

20% Glucosum 10 ml ampoules are available in the Accident and Emergency Department. The emergency procedure involves intravenous administration of:

- A.** 1.6 mg. **B.** 16 mg. **C.** 16,000 mg. **D.** 2 g. **E.** 500 g.

No 24. In the case of increased intracranial pressure in adult patients, there are disturbances in respiration and circulation referred to as Cushing's triad. Indicate its symptoms:

- 1) irregular breathing.
- 2) decrease in blood pressure.
- 3) bradycardia.
- 4) tachycardia.
- 5) increase in blood pressure.

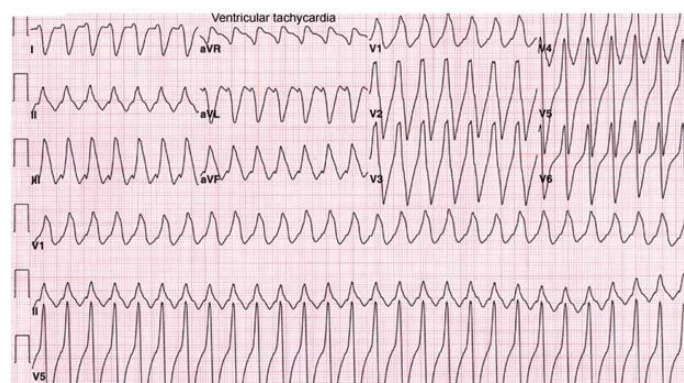
The correct answer is:

- A.** 2,3. **B.** 1,2,4. **C.** 4,5. **D.** 1,3,5. **E.** 4,5.

No 25. An adult patient, of 80 kg body weight, has suffered second and third degree burns of the anterior chest surface. According to the "the rule of nines" and the Parkland formula, on the first day of burn treatment, intravenous crystalloid should be administered in a volume of:

- A.** 700 mL. **B.** 900 mL. **C.** 2550 mL. **D.** 3000 mL. **E.** 5760 mL.

No 26. A patient about 70 years old presented to the Accident and Emergency Department after a fainting episode, and with visible signs of acute circulatory failure, blood pressure (BP) 70/30, pallor of the skin, and a capillary refill time (CRT) of 4 seconds. The patient's described condition and the following ECG recording indicate the need for taking the following actions:



- A.** defibrillation with 150J of energy.
- B.** cardioversion.
- C.** carotid sinus massage in a supine position.
- D.** intravenous administration of Adenosine at a dose of 6 mg.
- E.** intravenous administration of Magnesium Sulfate at a dose of 2 g.

No 27. In adult patients, life-threatening causes of chest pain **do not include:**

- A. pneumonia.
- B. pneumothorax.
- C. pericarditis.
- D. acute coronary syndrome.
- E. aortic dissecting aneurysm.

No 28. In an adult patient, pinpoint pupils of less than 1 mm in diameter are characteristic of:

- A. overdose of opioids.
- B. intussusception of the hippocampal gyrus.
- C. metabolic disorders.
- D. changes in the midbrain.
- E. hypothermia.

No 29. According to the guidelines of the European Resuscitation Council published in 2021, in an adult patient during cardiopulmonary resuscitation, capnography is used for the following purposes:

- 1) blood oxygenation assessment.
- 2) ruling out CO poisoning.
- 3) making a decision to start CPR.
- 4) monitoring the quality of CPR that is being performed.
- 5) confirmation of the endotracheal tube position.

The correct answer is:

- A. 4,5. B. 1,2. C. only 3. D. 2,3. E. 1,2,5.

No 30. Paradoxical chest wall respiratory motion occurs in the following situation:

- A. evisceration.
- B. cardiac tamponade.
- C. external pneumothorax.
- D. flaccid chest.
- E. circumferential chest burns.

No 31. The most common form of altitude sickness is:

- A. acute laryngitis.
- B. acute mountain sickness.
- C. pneumonia.
- D. deep venous thrombosis.
- E. deep vein inflammation.

No 32. Emergency thoracotomy should be performed in the event of active bleeding into the pleural cavity, when immediately after the drain insertion we obtain:

- A. 250 mL of blood, at a time.
- B. 500 mL of blood, at a time.
- C. 1000 mL of blood, at a time.
- D. 1500 mL of blood, at a time.
- E. continuous drainage of 100-150 ml/h over the next four hours.

No 33. During resuscitation, the brachial artery pulse is taken in:

- A. children up to 3 years old.
- B. newborns and infants.
- C. women in advanced pregnancy.
- D. children until puberty.
- E. all casualties, regardless of age.

No 34. The three specific symptoms of a bone fracture are:

- A. deformation of the limb outlines, pathological bone mobility, crackling and friction of bone fragments.
- B. pain, tenderness of the limb, oedema.
- C. reduced mobility, oedema, haematoma.
- D. muscle contracture, suffusion, oedema.
- E. pain, limb oedema, bruising.

No 35. In the treatment of postoperative pain, in patients after limb injuries, we use analgesics, **except for:**

- A. paracetamol.
- B. metamizole.
- C. ketoprofen.
- D. morphine.
- E. diazepam.

No 36. In a 3-year-old child, artificial respiration and heart massage involve performing:

- A. 5 chest compressions and 1 breath.
- B. 5 chest compressions and 2 breaths.
- C. 10 chest compressions and 2 breaths.
- D. 15 chest compressions and 2 breaths.
- E. 30 chest compressions and 1 breath.

No 37. During resuscitation, we reassess the vital signs:

- A. regularly every 1-2 minutes.
- B. always before applying AED electrodes.
- C. if the patient begins to react – moves and opens his eyes.
- D. after 5 CPR cycles.
- E. after the patient has regained consciousness.

No 38. An indication for induction of vomiting is swallowing a high dose of poison leading to severe poisoning over the time period of:

- A. up to 15 minutes after swallowing the poison.
- B. up to 30 minutes after swallowing the poison.
- C. up to 60 minutes after swallowing the poison.
- D. we do not induce vomiting.
- E. up to 120 minutes after poisoning

No 39. A patient in coma, with hyporeflexia, shallow breathing, pinpoint narrowed pupils, bradycardia, cool skin, slow intestinal peristalsis and injection marks was brought to the Accident and Emergency Department. The diagnosis will be:

- A. cholinergic toxidrome.
- B. sedative-hypnotic toxidrome.
- C. opioid toxidrome.
- D. sympathomimetic toxidrome.
- E. cholinergic toxidrome.

No 40. Acute cholangitis can be diagnosed on the basis of a set of symptoms, the so-called Charcot's cholangitis triad, which includes:

- A. acute right subcostal pain of biliary colic nature, fever with chills and jaundice.
- B. dull encircling epigastric pain, jaundice, bradycardia.
- C. colicky pain of the right lumbar region, vomiting, jaundice.
- D. acute pain in the umbilical area, fever and tachycardia.
- E. colicky pain in the left hypochondrium, vomiting, chills.

No 41. A patient has developed dyspnoea, tachycardia, paradoxical pulse, decreased blood pressure, cervical vein dilatation and muffled heart sounds after a traffic accident. The diagnosis is:

- A.** tension pneumothorax.
- B.** myocardial infarction.
- C.** chronic obstructive pulmonary disease.
- D.** pulmonary embolism.
- E.** cardiac tamponade.