Database of questions for the Medical Final Examination (LEK)

Part 2

Internal diseases

Modified 15.12.2023

No. 1. Which of the following statements are true?

1) lung abscess might be a result of central necrosis of a tumour, typically adenocarcinoma;
2) lung adenocarcinoma develops in the peripheral parts of the lung;
3) the risk of developing small-cell carcinoma is loosely linked with smoking, contrary to the risk of developing squamous cell carcinoma;
4) in a patient with lung cancer, unilateral diminished breath sounds might result not only from pleural effusion but also from atelectasis caused by ipsilateral bronchial obstruction or phrenic nerve palsy;
5) appropriate laryngological and neurological evaluation suffices in the diagnosis of hoarseness caused by non-infectious factors and Horner's syndrome;
6) the course of lung cancer might be accompanied by an increase in carcinoembryonic antigen (CEA) in the blood serum.

The correct answer is:

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

No. 2. Which of the following statements are true?

1) the enlargement of the left supraclavicular lymph node (Vichrow's node) in a patient with stomach cancer is also called Troisier's sign;
2) dysphagia does not occur in the course of stomach cancer;
3) the infection with Helicobacter pylori is a risk factor for stomach cancer of intestinal type;
4) the diagnosis of early-stage stomach cancer is not possible when metastases to regional lymph nodes are observed;
5) the symptoms of early-stage stomach cancer might include recurring bleeding;
6) endoscopic treatment is always sufficient in early-stage stomach cancer.

The correct answer is:

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

No. 3. Which of the following statements are true?

1) smoking is a risk factor for pancreatic cancer;
2) the first symptom of pancreatic cancer in a patient aged 50 or above might be diabetes;
3) Courvoisier sign involves the presence of jaundice and acute subcostal pain on the right side. It is often accompanied by Chelmonski sign and Murphy's sign;
4) mucinous and serous cystic pancreatic neoplasms are more common in males;
5) a high concentration of CA-19-9 in the blood serum has high sensitivity and specificity in the diagnosis of pancreatic cancer;
6) abdominal ultrasonography is neither an appropriate method in screening tests for pancreatic cancer, nor for post-operative monitoring.

The correct answer is:

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

No. 4. Which of the following statements are true?

1) malignant kidney cancer might be accompanied by anaemia or polycythaemia;
2) clear cell renal carcinoma causes distant metastases at its early stage. They might, however, regress following the excision of the primary tumour;
3) renal artery embolization is not therapeutically significant in a patient with kidney tumour;
4) the classical triad of kidney tumour (haematuria, a palpable mass and a lumbar pain) is common, but typically indicates an advanced stage of the disease;
5) a sudden occurrence of vulvar varicosities or varicocele is not connected with left kidney pathology, even theoretically;
6) acquired cystic disease is considered to be a precancerous condition.

The correct answer is:

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

No. 5. Which of the following statements are true?

1) hypertriglyceridaemia >1000mg/dl is considered to be a rare risk factor for acute pancreatitis;
2) Cullen's sign is a marker of a severe form of acute pancreatitis;
3) in acute pancreatitis amylase activity in the blood may persist for months, even after the disease has been managed;
4) the presence of fluid sacs with the necrosis of >½ of the pancreatic parenchyma indicates a severe course of acute pancreatitis according to CTSI;
5) chronic pancreatitis might be caused by a narrowing of the duct of Wirsung as well as the presence of calculi therein;
6) Patients with chronic pancreatis develop symptoms of deficiencies of all fat-soluble vitamins.

The correct answer is:

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

No. 6. Which of the following drugs is not a first-line treatment of hypertension?

A. perindopril.
B. amlodipine.
C. indapamide.
D. clonidine.
E. losartan.

No. 7. Which diuretic should be used first in the treatment of hypertension in a patient with GFR <30 ml/min/1,73 m^2:

A. indapamide.
B. hydrochlorothiazide.
C. spironolactone.
D. furosemide.
E. eplerenone.

No. 8. Which of the drugs used in the treatment of hypertension might cause a severe attack of gout:

A. amlodipine.
B. losartan.
C. perindopril.
D. indapamide.
E. bisoprolol.

No. 9. Which of the drugs used in the treatment of hypertension might cause dry cough:

A. amlodipine.
B. losartan.
C. perindopril.
D. indapamide.
E. bisoprolol.

No. 10. Which of the drugs used in the treatment of hypertension might cause ankle oedema:
- **A.** amlodipine.
- **B.** losartan.
- **C.** perindopril.
- **D.** indapamide.
- **E.** bisoprolol.

No. 11. Which of the drugs used in the treatment of hypertension might cause bradycardia:
- **A.** amlodipine.
- **B.** losartan.
- **C.** perindopril.
- **D.** indapamide.
- **E.** bisoprolol.

No. 12. Which of the drugs used in the treatment of hypertension might cause hyperkalaemia:
- **A.** amlodipine.
- **B.** hydrochlorothiazide.
- **C.** perindopril.
- **D.** indapamide.
- **E.** furosemide.

No. 13. Which of the drugs used in the treatment of hypertension might cause hypokalaemia:
- **A.** valsartan.
- **B.** losartan.
- **C.** perindopril.
- **D.** indapamide.
- **E.** ramipril.

No. 14. Which drug combination **should not** be used in the treatment of hypertension:
- **A.** perindopril and indapamide.
- **B.** perindopril and amlodipine.
- **C.** perindopril and losartan.
- **D.** amlodipine and indapamide.
- **E.** losartan and amlodipine.

No. 15. The use of which drug might pose the highest risk of causing erectile dysfunctions in males:
- **A.** amlodipine.
- **B.** losartan.
- **C.** perindopril.
- **D.** bisoprolol.
- **E.** valsartan

No. 16. A male patient presents to an outpatient clinic with a headache and a blood pressure of 210/110 mm Hg. The patient uses perindopril, indapamide and amlodipine irregularly as hypertension treatment. Which of the following drugs should be given first to reduce the patient's blood pressure?
- **A.** ramipril.
- **B.** perindopril.
- **C.** captopril.
- **D.** enalapril.
- **E.** amlodipine.

No. 17. Which of the drugs should be used first to treat hypertension in pregnant women:
- **A.** ramipril.
- **B.** perindopril.
- **C.** captopril.
- **D.** enalapril.
- **E.** methyldopa.

No. 18. The blood pressure of a 54-year-old patient could not be lowered to the desired level although three drugs i.e. perindopril, indapamide and amlodipine had been used. The patient's eGFR is 64 ml/min/1.73 m^2, and potassium concentration is 4.1 mmol/l. Which of the following drugs should be considered the first one to use in order to reduce the patient's blood pressure?

- **A.** methyldopa.
- **B.** verapamil.
- **C.** doxazosin.
- **D.** spironolactone.
- **E.** losartan.

No. 19. An unconscious patient has a blood pressure of 240/120 mm Hg. Which of the following drugs should be used first in order to reduce the patient's blood pressure?

- **A.** indapamide.
- **B.** urapidil.
- **C.** captopril.
- **D.** amlodipine.
- **E.** losartan.

No. 20. An 80-year-old female, who has neither eaten nor drunk for the previous 48h due to general malaise, is transferred to A&E. Her blood pressure is 80/50 mm Hg, while her pulse is 96/min. Her serum sodium concentration is 154 mmol/l and her potassium concentration is 4.8 mmol/l. The patient's oral mucosa is dry. Which of these intravenous infusions should be administered first?

- **A.** 5% glucose solution.
- **B.** 10% glucose solution.
- **C.** 20% glucose solution.
- **D.** 0.9% saline solution.
- **E.** 8.4% sodium bicarbonate solution.

No. 21. A 41-year-old male patient has been brought to A&E due to fainting. He has been suffering from diabetes type I for 25 years and is treated with insulin. The patient blood tests reveal the following: pH - 7.2, HCO_3 - 10 mmol/l, sodium concentration - 139 mmol/l, potassium concentration – 4.9 mmol/l, and glucose - 380 mg/dl. Which of these intravenous infusions should be administered first?

- **A.** 0.9% saline solution.
- **B.** insulin, 0.9% saline solution, 0.3% potassium chloride solution
- **C.** insulin, 5% glucose.
- **D.** insulin, 10% glucose.
- **E.** 8.4% sodium bicarbonate solution.

No. 22. A 79-year-old male presents to the doctor with general malaise. His blood tests reveal haemoglobin 10 g/dl. MCV, MCH and MCHC are below normal limits. The numbers of blood platelets and leukocytes are normal. Which of the conditions should be ruled out first?

- **A.** vitamin B12 deficiency.
- **B.** colorectal cancer.
- **C.** hemochromatosis.
- **D.** folic acid deficiency.
- **E.** chronic kidney disease.

No. 23. Diabetes screening tests in a symptomless 68-year-old male involving a venous (plasma) blood glucose test reveal fasting glucose at the level of 152 mg/dl. Which course of action is appropriate in this case?

- **A.** the patient should be diagnosed with diabetes and treated pharmacologically with metformin as long as there are no contraindications.
- **B.** the blood glucose test should be repeated with the use of a glucometer any time.
- **C.** the venous blood glucose test should be repeated and fasting blood glucose established over the next few days.
- **D.** oral glucose tolerance tests should be performed.
- **E.** the venous blood glucose test should be repeated and fasting blood glucose established in one year's time.

No. 24. A 74-year-old male presents to the doctor complaining of bloody urine. Urinalysis reveals increased erythrocytes in urine. Which of the following examinations should begin the differential diagnosis of haematuria in this patient?

- **A.** an abdominal ultrasound.
- **B.** renal scintigraphy.
- **C.** urography.
- **D.** a kidney biopsy.
- **E.** a prostate biopsy.

No. 25. Serum creatinine levels depend primarily on the excretory activity of the kidneys and on:

- **A.** the height.
- **B.** the amount of fatty tissue.
- **C.** the body mass.
- **D.** the muscle mass.
- **E.** the protein intake.

No. 26. In primary hyperthyroidism the following abnormalities are observed:

- **A.** increased TSH and increased FT4.
- **B.** increased TSH and decreased FT4.
- **C.** normal TSH and decreased FT4.
- **D.** decreased TSH and increased FT4.
- **E.** decreased TSH and decreased FT4.

No. 27. In primary hypothyroidism the following abnormalities are observed:

- **A.** increased TSH and increased FT4.
- **B.** increased TSH and decreased FT4.
- **C.** normal TSH and decreased FT4.
- **D.** decreased TSH and increased FT4.
- **E.** decreased TSH and decreased FT4.

No. 28. In acute pancreatitis the following abnormalities are typically observed in blood tests:

- **A.** increased activity of amylase and lipase.
- **B.** decreased activity of amylase and lipase.
- **C.** increased activity of amylase and decreased activity of lipase.
- **D.** decreased activity of amylase and increased activity of lipase.
- **E.** increased activity of amylase and normal activity of lipase.

No. 29. A 25-year old female presented to the doctor complaining of painful urination that started a few hours before. Which of the parameters of her urinalysis indicates urinary tract infection?

- **A.** presence of glucose in the urine.
- **B.** low specific gravity of the urine.
- **C.** low urine pH.
- **D.** presence of proteins in the urine.
- **E.** increased leukocytes in the urine.

No. 30. A 72-year-old male with a recently diagnosed lung cancer has a serum sodium concentration of 119 mmol/l. The male is neither oedematous, nor dehydrated. A repeated intravenous infusion of 500ml of 0.9% saline solution has not increased the sodium levels. Which course of action should be followed to normalize the sodium levels?

- **A.** administer intravenous infusion of 3% saline solution.
- **B.** administer intravenous infusion of 10% saline solution.
- **C.** increase the intake of table salt
- **D.** decrease water intake.
- **E.** increase water intake.

No. 31. A TSH concentration of 16 mIU/l and a decreased FT4 concentration were observed in a 76-year-old male. As a result, treatment with levothyroxine was initiated. Which of the doses is the most appropriate on the commencement of treatment with levothyroxine?

- **A.** 25 µg per day.
- **B.** 75 µg per day.
- **C.** 100 µg per day.
- **D.** 150 µg per day.
- **E.** 200 µg per day.

No. 32. Which of the following is not the first-line treatment of uncomplicated cystitis?

- **A.** furazidine.
- **B.** cotrimoxazole.
- **C.** trimethoprim.
- **D.** phosphomycin.
- **E.** clindamycin.

No. 33. A 24-year-old male patient suffering from diabetes type I and treated with insulin (4 injections per day) suddenly loses consciousness. The patient breathes normally and his pulse is 120bpm. What is the best course of action in this case?

- **A.** administer intravenous infusion of 5% glucose immediately.
- **B.** administer intravenous infusion of 20% glucose immediately.
- **C.** immediately administer insulin subcutaneously.
- **D.** immediately administer insulin intravenously.
- **E.** determine glucose levels and decide whether to administer glucose or insulin intravenously based on the results.

No. 34. The reason for bronchial sounds occurring above the lungs is:

- **A.** chronic bronchitis.
- **B.** pneumonia
- **C.** obturation atelectasis.
- **D.** emphysema.
- **E.** asthma.

No. 35. Which is the threshold above which sleep apnoea is diagnosed:

- **A.** 1 period of apnoea (lasting for 10 seconds or longer) or insufficient breathing (breathing reduced by 50% and lasting for 10 seconds or longer) in one hour of sleep.
- **B.** 5 periods of apnoea (lasting for 10 seconds or longer) or insufficient breathing (breathing reduced by 50% and lasting for 10 seconds or longer) in one hour of sleep.
- **C.** 15 periods of apnoea (lasting for 10 seconds or longer) or insufficient breathing (breathing reduced by 50% and lasting for 10 seconds or longer) in one hour of sleep.
- **D.** 25 periods of apnoea (lasting for 10 seconds or longer) or insufficient breathing (breathing reduced by 50% and lasting for 10 seconds or longer) in one hour of sleep.
- **E.** 50 periods of apnoea (lasting for 10 seconds or longer) or insufficient breathing (breathing reduced by 50% and lasting for 10 seconds or longer) in one hour of sleep.

No. 36. Which is/are the symptom/symptoms of CO_2 retention in acute on chronic type 2 respiratory failure?

1) confusion;
2) peripheral coldness;
3) asterixis (flapping tremor);
4) sinus tachycardia;
5) a bounding pulse.

The correct answer is:
A. 1,2. **B.** 2,4. **C.** 2,4,5. **D.** 1,3,5. **E.** only 1.

No. 37. Which statements are true about obstructive pulmonary diseases in elderly patients?

1) asthma does not occur at an advanced age for the first time. Hence, obstruction symptoms might be attributed to chronic obstructive pulmonary disease;
2) positive consequences of quitting smoking are observed even until the age of 80;
3) advanced age excludes the possibility of intensive therapy and mechanical ventilation in an acute episode of chronic obstructive pulmonary disease;
4) elderly people experience narrowing of the airways to a lesser degree, so their description cannot serve as a basis for diagnosing aggravation in this respect;
5) in elderly patients increased heart rate is lower as compared to young patients with the same degree of bronchial stenosis.

The correct answer is:
A. 1,3. **B.** 3,4. **C.** 1,4,5. **D.** 1,5. **E.** 2,4,5.

No. 38. In asthma a regular anti-inflammatory therapy, preferably involving the use of inhaled corticosteroids, should be initiated in a patient who:

1) does not use β2-adrenergic receptor agonists;
2) experiences asthmatic symptoms that occur not more often than once a week;
3) wakes up due to asthma at least once a week;
4) states that the symptoms occur at least three times a week;
5) has experienced aggravation over the last 2 years.

The correct answer is:
A. 3,4,5. **B.** 1,2,3. **C.** 1,5. **D.** only 4. **E.** only 5.

No. 39. In antibiotic treatment of uncomplicated community-acquired pneumonia, the following drugs should be used:

A. amoxicillin 500 mg orally every 8 hours. If the patient is allergic to penicillin, clarithromycin 500 mg orally every 12 hours or erythromycin 500 mg orally every 6 hours.
B. amoxicillin 500 mg orally every 8 hours. If the patient is allergic to penicillin, cefuroxime 1.5 g intravenously every 8 hours.
C. cefuroxime 500 mg orally every 12 hours. If the patient is allergic to penicillin, erythromycin 500 mg orally every 6 hours.
D. erythromycin 500 mg orally every 6 hours. If the patient is allergic to penicillin, cefuroxime 500 mg orally every 12 hours.
E. amoxicillin 500 mg orally every 8 hours. If the patient is allergic to penicillin, cefuroxime 500 mg orally every 12 hours.

No. 40. Which statement is true about the treatment of asthma in pregnancy and breastfeeding?

A. treatment with oral leukotriene receptor antagonists should be discontinued even if it helped manage asthma before pregnancy.
B. prostaglandin $F_{2\alpha}$ may cause contraction of the bronchi and should be used with extreme care.
C. drugs should be discontinued for the period of breastfeeding.
D. pregnancy never affects asthma management.
E. inhaled corticosteroids should always be discontinued in pregnancy.

No. 41. Which of the following statements about Henoch–Schönlein purpura is **false**?

- **A.** it affects children and never occurs in adults.
- **B.** the microscopic image of a kidney biopsy specimen is indistinguishable from an image of acute nephropathy.
- **C.** abdominal pain is caused by vasculitis affecting the blood vessels of the digestive tract.
- **D.** joint pain is part of the clinical picture
- **E.** macro- or microscopic haematuria is present with or without proteinuria.

No. 42. Which statement is true?

- **A.** unilateral facial hypohidrosis is caused by the obstruction of the superior vena cava triggered by a tumour of the apex of the lung.
- **B.** unilateral facial hypohidrosis is caused by the infiltration of the brachial plexus by a tumour of the apex of the lung.
- **C.** unilateral facial hypohidrosis is caused by a cancerous process in the sympathetic trunk at the site of the stellate ganglion or above it.
- **D.** unilateral facial hypohidrosis is caused by the syndrome of inappropriate antidiuretic hormone secretion triggered by bronchial cancer.
- **E.** unilateral facial hypohidrosis is caused by myasthenia gravis in the course of bronchial cancer.

No. 43. Which is a clinical symptom of carcinoid syndrome?

- **A.** episodes of facial skin pallor.
- **B.** chronic constipation.
- **C.** albinism.
- **D.** atrophy of the muscles of the thenar eminence.
- **E.** permanent telangiectasias.

No. 44. Blue sclerae are a symptom of:

- **A.** Turner syndrome.
- **B.** achondroplasia.
- **C.** Down syndrome.
- **D.** congenital bone fragility.
- **E.** Marfan syndrome.

No. 45. A patient developed symptoms of hypoglycaemia. Low blood glucose levels were observed in a test performed while the symptoms were present. The symptoms resolved once hypoglycaemia had been corrected. The concentrations of insulin and C-peptide in the blood were increased. What caused the above?

1) hypopituitarism;
2) insulinoma;
3) primary hypopituitarism;
4) sulfonylurea derivatives;
5) exogenous insulin.

The correct answer is:

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

No. 46. A patient with a hormonally active pheochromocytoma requires pharmacological treatment in preparation for a surgical procedure. The treatment involves:

- **A.** the administration of a β-adrenolytic drug for 6 weeks and the addition of an α-adrenolytic drug in the case of a poor hypotensive effect.
- **B.** the administration of only an α-adrenolytic drug for 6 weeks; β-adrenolytic drugs are always contraindicated.
- **C.** the administration of an α-adrenolytic drug and the addition of a β-adrenolytic drug in the case of severe tachycardia
- **D.** the administration of an α-adrenolytic drug and the addition of a loop diuretic in the case of a poor hypotensive effect.
- **E.** the administration of an α-adrenolytic drug and the addition of a thiazide diuretic in the case of a poor hypotensive effect.

No. 47. Which statement is true about bile acid diarrhoea?

A. it does not respond to treatment with ion exchange resins such as cholestyramine.
B. it is never accompanied by cholelithiasis as the excess of bile is excreted to the small intestine.
C. it occurs only as a complication of small intestine resection.
D. it never occurs in diabetes due to the gastrointestinal motility disorders present in this disease
E. affected patients present with a sudden, watery diarrhoea or mild steatorrhoea.

No. 48. Which statement is true about Vater papilla carcinoma?

A. it always causes permanent jaundice.
B. the manifestations include pain, anaemia, vomiting and weight loss.
C. the prognosis is poorer than in the case of cholangiocarcinoma.
D. the diagnosis is not based on the endoscopic examination of the duodenum with a biopsy of the tumour, but on endoscopic ultrasonography.
E. surgical treatment involves only palliative procedures – a bypass or a stent placement.

No. 49. Which statement is true about medullary thyroid cancer?

1) it forms from the parafollicular C cells;
2) radioactive iodine treatment and TSH suppression with the use of levothyroxine are not applicable in the treatment of this type of cancer;
3) distant metastases are often present at the moment of diagnosis;
4) it may secrete calcitonin, serotonin, ACTH;
5) chronic constipation might be present as a result of hypercalcitoninaemia.

The correct answer is:
A. 3,5. **B.** 1,3. **C.** 1,2,4. **D.** only 4. **E.** only 1.

No. 50. Screening for hepatocellular carcinoma (HCC) involves:

A. an ultrasound and alpha-fetoprotein measurement every 12 months in high-risk patients i.e. those with cirrhosis caused by hepatitis B and C, hemochromatosis, alcohol.
B. an ultrasound and alpha-fetoprotein measurement every 6 months in high-risk patients i.e. those with cirrhosis caused by hepatitis B and C, hemochromatosis, alcohol.
C. an ultrasound and alpha-fetoprotein measurement every 6 months in high-risk patients i.e. those with cirrhosis caused by hepatitis B and C, hemochromatosis, but not alcohol.
D. an ultrasound and alpha-fetoprotein measurement every 12 months in high-risk patients i.e. those with cirrhosis caused by hepatitis B and C, hemochromatosis, but not alcohol.
E. an ultrasound and alpha-fetoprotein measurement every 12 months in high-risk patients i.e. those with cirrhosis caused only by hepatitis B and C.

No. 51. Which is true about gastrointestinal stromal tumours (GIST)?

A. they are typically asymptomatic, although the larger ones may trigger dyspepsia, ulceration and bleeding from the digestive tract, unlike other mesenchymal neoplasms they do not show proto-oncogene c-kit expression.
B. those of a diameter < 2cm typically manifest as gastrointestinal bleeding, unlike other mesenchymal neoplasms they do not show proto-oncogene c-kit expression.
C. they are typically asymptomatic, although the larger ones may trigger dyspepsia, ulceration and bleeding from the digestive tract, they show proto-oncogene c-kit expression.
D. those of a diameter < 2cm typically manifest as gastrointestinal bleeding, unlike other mesenchymal neoplasms they show proto-oncogene c-kit expression.
E. they are benign and never become malignant, but due to the strong tendency to cause ulceration they require treatment with a tyrosine kinase inhibitor.

No. 52. Amiodarone-induced hyperthyroidism type 2 is characterised by:

- **A.** an iodine-induced, increased synthesis of thyroid hormones in patients with a concomitant thyroid disease such as latent Graves' disease (an example of the Jod-Basedow effect).
- **B.** thyroiditis, which is a direct effect of the cytotoxic properties of amiodarone.
- **C.** increased iodine uptake.
- **D.** poor response to treatment with glucocorticoids.
- **E.** prompt resolution after amiodarone is discontinued.

No. 53. The gold standard in colorectal cancer prevention and screening is:

- **A.** regular faecal occult blood tests.
- **B.** sigmoidoscopy.
- **C.** rectoscopy.
- **D.** colonoscopy.
- **E.** CT.

No. 54. Autoimmune pancreatitis is characterised by:

- **A.** abdominal pain, weight loss, no mechanical jaundice, an enlarged pancreas in imaging examinations, good response to treatment with glucocorticoids.
- **B.** abdominal pain, weight loss or mechanical jaundice, a reduced pancreas size in imaging examinations, good response to treatment with glucocorticoids.
- **C.** abdominal pain, weight loss or mechanical jaundice, an enlarged pancreas in imaging examinations, good response only to treatment with azathioprine.
- **D.** abdominal pain, weight loss or mechanical jaundice, an enlarged pancreas in imaging examinations, no response to treatment with glucocorticoids.
- **E.** abdominal pain, weight loss or mechanical jaundice, an enlarged pancreas in imaging examinations, good response to treatment with glucocorticoids.

No. 55. Takotsubo cardiomyopathy is characterised by:

- **A.** bulging of the left ventricular apex accompanied by impaired function of the left ventricle and an obstructed outflow from the left ventricle. It is clinically and electroradiographically similar to acute coronary syndrome with an elevated ST segment. There are no significant abnormalities in coronary angiography.
- **B.** bulging of the left ventricular apex accompanied by impaired function of the left ventricle and an obstructed outflow from the left ventricle. It is clinically similar to acute coronary syndrome. Electroradiographically, there are no abnormalities and there are no significant abnormalities in coronary angiography.
- **C.** bulging of the left ventricular apex accompanied by impaired function of the left ventricle and an obstructed outflow from the left ventricle. It is clinically and electroradiographically similar to acute coronary syndrome with an elevated ST segment. Coronary angiography reveals occlusion of the circumflex artery.
- **D.** endocardial fibrosis with ventricular cavity obliteration in the course of eosinophilic granulomatosis with polyangiitis (formerly known as Churg-Strauss syndrome), mitral and tricuspid regurgitation and the symptoms of pulmonary and peripheral embolism.
- **E.** mild left ventricular hypertrophy caused by the mutation of troponin-coding genes, exercise-induced hypotension and a high risk of sudden death.

No. 56. Which is true about craniopharyngioma?

- **A.** it is a benign tumour located in the sella turcica and responsible for hyperprolactinemia.
- **B.** it is a benign tumour located in the sella turcica or in the suprasellar space. it may cause symptoms of hypopituitarism but never causes damage to the hypothalamus.
- **C.** it is a malignant, hormonally active tumour located in the suprasellar space that releases vasopressin.
- **D.** it is a benign tumour located in the sella turcica or in the suprasellar space. it may cause damage to the hypothalamus and induce diabetes insipidus.
- **E.** it is a malignant, hormonally inactive tumour that infiltrates the region of the optic chiasm.

No. 57. The pleural friction rub:
- **A.** is audible only on inspiration.
- **B.** is audible only on expiration.
- **C.** is audible both on inspiration and expiration.
- **D.** is a manifestation of pleuritis and therefore does not occur in pulmonary embolism.
- **E.** is never accompanied by pericardial friction rub, which it should be differentiated with.

No. 58. In spirometry, interstitial lung diseases e.g. idiopathic pulmonary fibrosis or sarcoidosis cause the following abnormalities in forced vital capacity (FVC) and forced expiratory volume in the first second (FEV_1):
- **A.** a decreased FEV_1/FVC ratio, which indicates restrictive defects.
- **B.** a decreased FEV_1/FVC ratio, which indicates obstructive defects.
- **C.** a decreased FVC and a normal FEV_1/FVC ratio, which indicates obstructive defects.
- **D.** a decreased FVC and a normal FEV_1/FVC ratio, which indicates restrictive defects.
- **E.** a decreased $FEV_1$and a normal FEV_1/FVC ratio, which indicates obstructive defects.

No. 59. A clinical manifestation of autonomic neuropathy in the course of diabetes is:
- **A.** tachycardia at rest.
- **B.** bradycardia at rest
- **C.** increased heartbeat irregularity.
- **D.** excessive pupil responsiveness to mydriatics.
- **E.** pupil dilation.

No. 60. Which of the statements below is true about metformin:
- **A.** it must not be used in obese patients with diabetes type 1.
- **B.** it is the first-line treatment in diabetes types 2, regardless of the patient's body mass.
- **C.** it should be discontinued when the glomerular filtration rate is 30-45 ml/min/1,73 m^2.
- **D.** it might increase the risk of ketoacidosis.
- **E.** its main side effect is constipation.

No. 61. The symptoms of hypercalcaemia include:
- **A.** diarrhoea.
- **B.** oliguria
- **C.** decreased thirst.
- **D.** renal colic
- **E.** asterixis (flapping tremor).

No. 62. The vascular pulmonary reactivity test used in the diagnosis of pulmonary hypertension might be performed with the use of the drugs given below except for:
- **A.** nitric oxide.
- **B.** epoprostenol.
- **C.** salbutamol .
- **D.** adenosine.
- **E.** iloprost.

No. 63. Which of the following drugs is part of every treatment protocol of plasma cell myeloma in a patient prepared for an autologous stem cell transplant?
- **A.** thalidomide
- **B.** bortezomib.
- **C.** cyclophosphamide .
- **D.** lenalidomide.
- **E.** doxorubicin.

No. 64. Oncological patients at the highest risk of cardiological complications (including the development of dilated cardiomyopathy) are patients whose chemotherapy involves the administration of:

- **A.** platinum derivatives
- **B.** alkylating agents.
- **C.** docetaxel.
- **D.** anthracycline.
- **E.** anti-VEGF antibodies.

No. 65. Which of the following is a monoclonal antibody that is used in the treatment of cancer (Non-Hodgkin lymphoma, chronic lymphocytic leukaemia, acute lymphoblastic leukaemia) and several autoimmune diseases (rheumatoid arthritis, ANCA vasculitis)?:

- **A.** bevacizumab
- **B.** trastuzumab.
- **C.** infliximab.
- **D.** tocilizumab.
- **E.** rituximab.

No. 66. Selected characteristics of gastric cancers according to Lauren classification are given below. Which of them describe intestinal type adenocarcinoma best?

- **A.** a prepyloric location, a connection with Helicobacter pylori infection, blood metastases to the liver.
- **B.** location at the angular incisure, a connection with e-cadherin-coding gene mutations, infiltration of the peritoneum in continuity.
- **C.** location in the body of the stomach, a connection with e-cadherin-coding gene mutations, an exophytic tumour, well-demarcated .
- **D.** location in the body of the stomach, increased risk with alcohol consumption and smoking, infiltration in continuity.
- **E.** a prepyloric location, thickening of the gastric wall with mucosal ulceration, no possibility of surgical treatment even in the early stages.

No. 67. Which of the following drugs used chronically reduces the risk of colorectal cancer (it is not recommended as prophylaxis of this type of cancer, though):

- **A.** allopurinol
- **B.** vitamin D.
- **C.** vitamin C.
- **D.** acetylsalicylic acid.
- **E.** N-acetylcysteine.

No. 68. The Kausch-Whipple procedure, which is used in the surgical treatment of the pancreatic head cancer, involves the removal of all the structures given below except:

- **A.** the gallbladder
- **B.** the common bile duct.
- **C.** the left liver lobe.
- **D.** the duodenum.
- **E.** the pyloric part of the stomach.

No. 69. Which is a biomarker of significant use in the diagnosis and monitoring of somatotrophic pituitary adenomas?

- **A.** somatoliberin.
- **B.** insulin-like growth factor 1.
- **C.** tumour necrosis factor alpha.
- **D.** transforming growth factor beta.
- **E.** somatostatin.

No. 70. Which abnormality is not typical of tumour lysis syndrome?

- **A.** hyperphosphataemia.
- **B.** increased creatinine.
- **C.** hyperkalaemia.
- **D.** hypercalcaemia.
- **E.** hyperuricaemia.

No. 71. Mitotane is a drug used in the treatment of advanced:

- **A.** adrenocortical carcinoma.
- **B.** testicular cancer.
- **C.** thyroid cancer.
- **D.** parathyroid cancer.
- **E.** urothelial carcinoma.

No. 72. Which statement is **false** about the treatment of differentiated thyroid glands with radioactive iodine:

- **A.** the effectiveness of the treatment requires an adequate (>30 mIU/ml) TSH concentration.
- **B.** the effectiveness of the treatment increases with the administration of exogenous recombinant TSH.
- **C.** radioactive iodine is used in the palliative treatment of metastases to the bones.
- **D.** no imaging examinations with the use of iodine contrast should be performed within the period of 3 months prior to the commencement of therapy with radioactive iodine
- **E.** radioactive iodine is effective in the treatment of metastases to the lungs on condition that the healthy parts of the thyroid are not removed after primary tumour resection.

No. 73. The most sensitive and universal diagnostic method used to identify hormonally active neuroendocrine tumours is:

- **A.** multidetector row spiral CT.
- **B.** MRI.
- **C.** positron emission tomography (PET) with the administration of f-fluorodeoxyglucose.
- **D.** receptor scintigraphy with the use of a somatostatin analogue radiolabelled with radioactive gallium or technetium.
- **E.** scintigraphy with the use of iobenguane (MIBG) radiolabelled with radioactive iodine.

No. 74. Which is a non-specific (universal) biomarker, whose determination allows us to diagnose neuroendocrine tumours of different origin with high sensitivity and specificity:

- **A.** serotonin.
- **B.** alpha-fetoprotein.
- **C.** chromogranin A.
- **D.** tumour necrosis factor alpha.
- **E.** insulin-like growth factor 1.

No. 75. Which is a biological drug used in the treatment of autoimmune diseases (including rheumatoid arthritis) that prevents the second signal in the process of T cell activation (the interaction between the T cell and the antigen-presenting cell):

- **A.** rituximab.
- **B.** abatacept.
- **C.** etanercept.
- **D.** leflunomide.
- **E.** tocilizumab.

No. 76. The list below includes selected diagnostic factors or symptoms that allow the diagnosis and assessment of the activity of rheumatoid arthritis. Which of them are not part of the basic scale (Disease Activity Index; DAS) used to assess the activity of the disease:

1) a subjective patient assessment of the aggravation of symptoms (on a scale 0-100);
2) WBC in the blood;
3) IgM rheumatoid factor measurement;
4) ESR;
5) CRP concentration;
6) fibrinogen concentration;
7) the number of anti-citrullinated protein antibodies;
8) the number of oedematous joints;
9) lymphocyte percentage in the blood.

The correct answer is:

A. 1,2,3. **B.** 2,4,9. **C.** 4,6,8. **D.** 2,3,7. **E.** 4,5,8.

No. 77. The list below includes clinical domains of the EULAR/ACR criteria for the classification of systemic lupus erythematosus. The patient scores between 2 and 10 points in each domain and more than 10 points are required to diagnose the disease. In which of the clinical criteria can the patient score the most?

A. synovitis or tenderness in ≥ 2 joints and at least 30 minutes of morning stiffness.
B. thrombocytopenia.
C. delirium.
D. oral ulcers.
E. proteinuria (> 0.5 g/24 hours).

No. 78. The only biological drug (anti-body) registered for the treatment of systemic lupus erythematosus is:

A. anakinra.
B. tocilizumab.
C. belimumab.
D. infliximab.
E. daratumumab.

No. 79. Which of the following drugs used in the treatment of chronic obstructive pulmonary disease are short-acting:

1) ipratropium;
2) tiotropium;
3) glycopyrronium bromide;
4) formoterol;
5) fenoterol;
6) salbutamol.

The correct answer is:

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

No. 80. In 70% of patients with primary sclerosing cholangitis the disease is accompanied by:

A. IgA nephropathy.
B. ulcerative colitis.
C. Hashimoto's disease.
D. albinism.
E. ankylosing spondylitis.

No. 81. Which antibiotic **<u>is not included</u>** in any of the present-day Helicobacter pylori eradication schemes:

A. clarithromycin.
B. amoxicillin.
C. cefuroxime.
D. metronidazole.
E. levofloxacin.

No. 82. In which of the following acquired heart defects is fainting the most common?

A. mitral regurgitation
B. aortic regurgitation.
C. tricuspid valve regurgitation.
D. aortic stenosis.
E. mitral valve prolapse.

No. 83. The Austin Flint murmur is a:

A. diastolic murmur caused by the aortic valve.
B. diastolic murmur caused by the mitral valve.
C. systolic murmur caused by the mitral valve.
D. systolic murmur caused by the aortic valve.
E. Systolic murmur caused by a left-to-right shunt in ventricular septal defect.

No. 84. Every patient brought to A&E due to fainting should have:

A. a head CT performed.
B. CRP (c-reactive protein) measured.
C. MRI of the cervical spine performed.
D. electrocardiography performed.
E. troponin levels measured.

No. 85. Vasovagal syncope is accompanied by:

A. tachycardia and increased blood pressure.
B. bradycardia and eyelid oedema.
C. bradycardia and hypotonia.
D. tachycardia and hypotonia.
E. urinary incontinence.

No. 86. Which drugs are not used as first-line treatment of heart failure with reduced ejection fraction according to the present-day European guidelines:

1) long-acting nitrates;
2) dihydropyridine calcium channel blockers;
3) dapagliflozin;
4) semaglutide;
5) digoxin;
6) ramipril;
7) torsemide;
8) eplerenone.

The correct answer is:

A. 1,2,3,4. **B.** 1,2,4,5. **C.** 1,2,5,6. **D.** 2,3,6,7. **E.** 4,6,7,8.

No. 87. A new murmur is audible above the heart in a stable patient after myocardial infarction involving one of the papillary muscles. Which of these murmurs is the most probable?

A. a holosystolic murmur at the apex.
B. a late systolic murmur over the right second intercostal space near the sternal margin.
C. a mid-systolic murmur over the left second intercostal space near the sternal margin.
D. an early diastolic murmur over the right second intercostal space near the sternal margin.
E. a pandiastolic murmur at the apex.

No. 88. Which of the following drugs **<u>is not</u>** a drug of choice in the first 24 hours after the diagnosis of STEMI (ST elevation myocardial infarction):

A. ticagrelor.
B. aspirin.
C. prasugrel.
D. statin.
E. clopidogrel.

No. 89. Which is a **false** statement concerning hypertension in elderly patients (>70 y.o.):

- **A.** lowering the blood pressure does not reduce the risk of cardiovascular complications and mortality in this group of patients.
- **B.** isolated diastolic hypertension is the most common type of hypertension in this group of patients.
- **C.** blood pressure of <130/80 mmHg should be avoided in this group of patients.
- **D.** beginning the therapy with lower doses than in the case of younger patients minimizes the risk of side effects.
- **E.** the risk of orthostatic hypotonia is higher than in other patients.

No. 90. Several sets of hypotensive drugs used in the treatment of hypertension are given below. Which combination, although acceptable, **is not** preferrable in the first-line treatment (unless there are additional indications)?

- **A.** an angiotensin II receptor blocker and a thiazide or a thiazide-like drug.
- **B.** a dihydropyridine calcium channel blocker and a thiazide or a thiazide-like drug.
- **C.** a dihydropyridine calcium channel blocker and an angiotensin converting-enzyme inhibitor.
- **D.** an angiotensin converting-enzyme inhibitor and a beta-blocker.
- **E.** an angiotensin converting-enzyme inhibitor and a thiazide or a thiazide-like drug.

No. 91. According to the PESI scale, which is used to assess the prognosis of pulmonary embolism, a score of more than 125 points means a high risk of death in the course of the disease. In this scale the highest score (as many as 60 pts) is given for:

- **A.** a history of cancer.
- **B.** systolic blood pressure <100 mmHg.
- **C.** altered mental status.
- **D.** a history of chronic lung disease
- **E.** respiratory rate >30 bpm.