Topic: The main clinical features in chronic bronchitis and bronchial asthma. Chronic obstructive pulmonary disease. Syndrome of increased airiness of the lung tissue.

Test tasks:

1. What processes occur in the bronchi in the onset of bronchial asthma attack?
   A) mucosal edema;
   B) bronchial spasm;
   C) increased secretion of viscous secretion by goblet cells;
   D) mucosal edema and bronchospasm;
   E) mucosal edema, bronchospasm, increased secretion of viscous secretion by goblet cells.

2. What processes occur in stage II of an attack of bronchial asthma?
   A) the occurrence of a mucous plug;
   B) mucus hyperproduction;
   C) connection of antigens with specific antibodies that are fixed on mast cells, plasma cells and lymphocytes;
   D) excretion of histamine, serotonin, bradykinin from mast cells and plasma cells;
   E) bronchial spasm, mucosal edema, bronchorrhea.

3. What processes occur in stage III of an attack of bronchial asthma?
   A. the occurrence of a mucous plug;
   B. mucus hyperproduction;
   C. connection of antigens with specific antibodies that are fixed on mast cells, plasma cells and lymphocytes;
   D. excretion of histamine, serotonin, bradykinin from mast cells and plasma cells;
   E. bronchial spasm, mucosal edema, bronchorrhea.

4. What elements do make sputum vitreous in bronchial asthma?
   A. large numbers of neutrophils;
   B. large amounts of fibrin;
   C. a large number of eosinophils;
   D. large numbers of lymphocytes;
   E. large amounts of lysozyme, interferon.
5. Coursman's spirals are:
   A) degenerative forms of eosinophils;
   B) casts of bronchial tubes consisting of the fused epithelium;
   C) casts of bronchial tubes consisting of mucosal elements;
   D) large coiled fibrin filaments;
   E) clots of purulent sputum.

6. Charcot-Leiden crystals are:
   A) degenerative forms of eosinophils;
   B) casts of bronchial tubes consisting of the fused epithelium;
   C) cholesterol crystals;
   D) curled fibrin filaments;
   E) clots of purulent sputum.

7. What percussion tone is observed over the lungs of a patient during an attack of bronchial asthma?
   A) dull;
   B) dullness;
   C) dullness tympanitis;
   D) bang-box;
   E) clear lung sound.

8. What are results of the auscultation in attack of bronchial asthma?
   A) increased vesicular respiration;
   B) weakening of vesicular respiration;
   C) rigid vesicular respiration with prolonged exhalation;
   D) bronchial respiration;
   E) puerile breathing.

9. What auscultatory data are in attack of bronchial asthma?
   A) wet fine consonant rales;
   B) wet non-consonant fine rales;
   C) crepitation;
   D) a lot of dry wheezing and wheezing;
   E) bronchial respiration.

10. What changes in peripheral blood occur in bronchial asthma?
    A) leukopenia;
    B) lymphocytosis;
C) lymphocytopenia;  
D) eosinophilia;  
E) neutrophilic leukocytosis with a shift to the left of the formula.

11. When is bronchial asthma more likely to occur?  
A) in the morning;  
B) after lunch;  
C) at night, in particular in the morning.;  
D) after breakfast;  
E) after dinner.

12. What does “status asthmaticus” mean?  
A) intermittent bronchial asthma;  
B) persistent mild bronchial asthma;  
C) persistent severe bronchial asthma;  
D) another name for bronchial asthma;  
E) uncontrolled bronchial asthma, a condition in which bronchial obstruction reaches its maximum extent and lasts for a long period, resistant to adrenal stimulating agents.

13. A progressive disease characterized by irreversible or partially reversible (under the influence of treatment) obstruction of the bronchial tree is called:  
A) bronchial asthma;  
B) chronic bronchitis;  
C) bronchiectasis;  
D) chronic obstructive pulmonary disease;  
E) chronic obstructive bronchitis.

14. What stage of COPD is characterized by the following features: 50% ≤FEV1 <80% proper; FEV1 / FVC <70%; the progression of symptoms, the onset of shortness of breath during exercise and during exacerbations?  
A) I;  
B) II;  
C) III;  
D) IV;  
E) V.

15. The degree of bronchial obstruction is detected by:  
A) Bronchography;
B) spirography;
C) bronchoscopy;
D) pneumotachometry;
E) radiological examination of the lungs;
F) tomography;
G) analysis of the flow-volume loop obtained on a Pneumoscreen apparatus.

16. The main clinical symptoms of COPD:
A) cough with sputum;
B) dry cough;
C) shortness of breath;
D) chest pain;
E) leg swelling;
F) reduction of exercise tolerance;
G) interruption in the heartbeat.

17. The internal risk factors for COPD are:
A) genetically caused (α1-antitrypsin deficiency);
B) bronchial hyperreactivity associated with long-term smoking, concomitant bronchial asthma.
C) incomplete lung development
D) long-term smoking;
E) industrial and domestic emissions;
F) low social and economic status
G) infections (severe childhood, respiratory, HIV).

**Topic:** The main clinical features in chronic bronchitis and bronchial asthma. Chronic obstructive pulmonary disease. Syndrome of increased airiness of the lung tissue.

**Task 1.** Patient K., 44 years old, has been coughing with a small amount of mucous sputum in the morning for the last 6-7 years.

On examination: hyperstenic, skin normal color; the chest evenly participates in the act of breathing. In comparative percussion in the symmetrical areas, pure pulmonary sound is determined. The results of topographic percussion lungs are within the normal values; vocal fremitus - unchanged. At auscultation of the lungs - breathing is vesicular everywhere. There are scattered dry wheezing.

Single rales are small and medium-sized humming wet rales. Bronchophonia –is not changed.

Questions:
1. What pathological process do you think the patient has?
2. What is the most common risk factor for this pathology?
3. Name the mechanism (traditional view) of dry rales. How does R. Forgacs explain the formation of dry rales?
4. What changes can occur in the lung tissue in the future?
5. What should be the secondary prevention of this disease?

Task 2. Patient V., 48, complains of asthma attacks with impaired exhalation, which occur suddenly, more often at night. He has dry cough.

On examination: breathing in the patient is quite loud, intercostal muscles take part in the breathing act; Skin has normal color. Chest is enlarged. Percussion shows bang-box sound; voice tremor is weakened. At auscultation of the lungs the respiration is vesicular in the lower-lateral parts. It is weakened. In other areas –it is harsh. A lot of whistling dry rales are heard; bronchophony is weakened.

Questions:
1. What pathological process can you suggest?
2. What does the box sound of percussion indicate?
3. What are the causes of severe breathing, give examples of diseases.
4. What rales are heard at a distance? Name them.
5. List macro- and microscopic features of sputum in this disease.

Task 3. Patient Z., 53 years old, has been suffering from chronic obstructive bronchitis for 13 years. She complained on the increasing expiratory dyspnea that had occurred 3 years ago. Recently, when climbing the stairs, she is forced to rest after every 10 steps.

Objectively: slight cyanosis of the lips is noted. Chest painless on palpation, with percussion of the lungs - box sound.

Questions:
1. Why did a patient with chronic bronchitis have shortness of breath?
2. What syndrome does manifest by shortness of breathing?
3. What surveys are needed to clarify it?
4. What will be the results of spirometry?
5. What is the forced position of the patient?