Osh State University

Medical Faculty

Department "Biochemistry, Pathophysiology and Pharmacology"

**«APPROVED»**

Head. Chair of MD, PhD Muratov Zh. K.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_

"\_\_\_\_\_" \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 20\_\_

GUIDELINES FOR TRAINEES

TO EXTRACURRICULAR WORK INDEPENDENTLY

SECTION: **PATHOPHYSIOLOGY OF BLOOD**

TOPIC: **Pathology of respiratory system.**

Developed: teacher Ismailov I.Dzh.

Methodical instructions approved at a meeting of the department

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_ 20\_\_. Protocol number \_\_\_\_

OSH

**Study subject:** Pathology of respiratory system.

**Aim of the lesson**: to study the mechanisms of obstructive and restrictive respiratory failure, pulmonary edema, periodic breathing.

**Format:** Preparing for the practical exercises.

**Questions for self-study:**

1. Pulmonary volumes and capacities.

2. Respiratory failure (etiology, causes, symptoms).

3. Types of disturbances of alveolar ventilation. Obstructive and restrictive disturbances.

4. Asthma. Pneumothorax. Emphysema. Etiologia. Pathogenesis.

5. Diffusion infringements. Ethiopathogenesis.

6. Perfusion disorders. Characteristic. Causes.

7. Pulmonary hypertension

8. Pulmonary edema.

9. Pneumothorax. Causes and consequences. Types of pneumothorax

10. Pathogenesis of periodic breathing (Cheyne-Stokes, Biote, Cussmaul).

**List of practical skills**

1. To be able to calculate the color index

2. To be able to interpret the change in the main indicators of red blood.

**Recommendations to UIRS:**

1. Making the album with the relevant tasks relating to using learning and m e ological literature.

2. Master the techniques of creative use of the program material on this topic by using problem solving.

**Self-control on test tasks:**

*1.* What infringements can lead to external breath insufficiency?

a) alveolar ventilation

b) diffusion of gases through alveolo-capillary membrane

c) transport of oxygen blood from lungs to tissues

d) tissue oxigenation

2. What systems participate in external breath?

a) respiratory

b) blood circulation

c) blood

d) central nervous system

e) excretion

3. Give causes of alveolar ventilation disturbances:

a) reduction of respiratory surface of lungs

b) constriction of respiratory tract

4. What is the mechanism of obstructive infringements of alveolar ventilation?

а) reduction of respiratory surface of lungs

b) infringement of passableness of respiratory tracts

5. Restrictive infringement of pulmonary ventilation are observed at:

a) pneumonia

b) pleurisy

c) retropharyngeal abscess

d) bronchial asthma

6. Obstructive infringements of pulmonary ventilation are observed in:

a) bronchial asthma

b) emphysema of lungs

c) pneumonia

d) tuberculosis

e) pleurisy

*7.* How is the residual volume changed in obstructive type of pulmonary insufficiency?

a) no change

b) increased

c) decreased

*8.* How is the residual volume changed in restrictive type of pulmonary insufficiency?

a) no change

b) increased

c) decreased

9. The vital capacity of lungs is volume of air which can be exhaled after?

a) the maximum breath

b) usual exhalation

c) usual breath

*10.* How is the vital capacity of lungs changed in obstructive type of pulmonary insufficiency?

a) no change

b) decreased

c) increased

**Self-control on situational problems:**

§1.

Patient Т., 19 years. On thу 3rd day of the disease has arrived into hospital with "acute pneumonia"diagnosis, was hospitalized. Breath was 32 per minute, superficial. Intercostal muscles participate in respiratory locomotions. Small bubbling and dry rales are heard in auscultation. Lungs radioscopy shows changes, characteristic of bilateral croupous pneumonia.

Examination of external respiration efficiency detected decreased blood oxygenation– arterial blood saturation was 86 %. What form of external respiration disturbance is observed in the

patient and what are the mechanisms of its development? Disturbace of what processes mostly causes decreased blood oxygenation in this case?

§2.

Patient К, 8 years, complains of frequent asthma attacks without obvious causes. During an attack breath becomes heavy, accompanied by cough, secretion of some viscous mucoid sputum. Sibilant rales are heard when breathing. Bronchial asthma is in anamnesis a from the age of 5.

What type of dyspnea is characteristic of this pathology? What type of a lung ventilation disorder takes place in this case during asthma attacks?

§3.

Patient V., 56 years, arrived in neurology department due to cerebral stroke. The state is severe. The Chejn-Stoke type periodic breathing is observed. What factor has major importance in the periodic breathing pathogeny?

§4.

Pneumothorax kinds. Which pneumothorax is considered to be most (least) dangerous? Why? Which type (obstructive, restrictive) of ventilation disorder is observed in pneumothorax?

§5.

List structures through which gases (О2 or СО2) diffuse from alveoles into erythrocytes and inversely. In what syndromes and lungs diseases of diffusion of gases is essentially disturbed?

LITERATURE:

1. Lecture material.

2. General and clinical pathophysiology/ Ed. by A. V. Kubyshkin –

Vinnytsa: Nova Knyha Publishers. – 2011. – P. 500-519.

3. Pathology/ ed. by E. Rubin and J.L. Farber. – 2nd ed. – 1994. – P.556 –

617.

4. Pathophysiology/ ed. by C. Paradiso (Lippincott’s review series). –

1995. – P. 1–25.

5. Pathophysiology of disease: an introduction to clinical medicine/ ed. By

S. J. McPhee, W. F. Ganong. – 2006. – P. 218 –258.

6. Internal medicine/ ed. by Harrisons. – 17th edition. N.Y. – 2008. – P.

1596 –1668.