Annotation work program discipline
"Pathophysiology, clinical pathophysiology»
Specialty - 31.05.01 General medicine

1. The purpose of discipline: development of the discipline of pathological physiology is to master students ' knowledge of modern scientific ideas about the integrative laws of life of the patient, typical pathological processes, pathogenetic mechanisms underlying diseases, as well as the principles of their development, treatment and prevention.
2. Place of discipline in the structure of OOP:

The discipline "Pathophysiology" refers to the cycle of mathematical, natural-scientific and medical-biological disciplines specialty "Medicine" higher professional medical education; studied in the fifth, sixth and ninth semesters.

3. Requirement for the results of the development of discipline:

The process of studying the discipline is aimed at the formation and development of competencies: OPC-1, OPC-7, OPC-9, PC-6, PC-21.

As a result of studying the discipline the student must

Know:

- basic concepts of General nosology;
- the role of causes, conditions, reactivity in the emergence, development and completion (outcome) of diseases;
- causes and mechanisms of typical pathological processes, conditions and reactions, their manifestations and significance for the body in the development of various diseases;
- causes, mechanisms and main manifestations of typical disorders of organs and physiological systems of the body;
- etiology, pathogenesis, manifestations and outcomes of the most common forms of pathology of organs and physiological systems, the principles of their etiological and pathogenetic therapy;
- the importance of physical and formalized (not physical) modeling of diseases and disease States, pathological processes, States and reactions for medicine and biology in the study of pathological processes;
- the role of various modeling methods: experimental (on animals, isolated organs, tissues and cells; on artificial physical systems), logical (intellectual), computer, mathematical, etc. in the study of pathological processes; their capabilities, limitations and prospects;
- the importance of pathophysiology for the development of medicine and health; the relationship of pathophysiology with other biomedical and medical disciplines.

Know:

- to solve professional tasks of the doctor on the basis of pathophysiological analysis of specific data on pathological processes, conditions, reactions and diseases;
- to carry out pathophysiological analysis of clinical and laboratory, experimental and other data and to formulate on their basis the conclusion about the most probable causes and mechanisms of development of pathological processes (diseases), principles and methods of their detection, treatment and prevention;
- apply the knowledge gained in the study of clinical disciplines in the subsequent therapeutic and preventive activities;
- analyze the problems of General pathology and critically evaluate modern theoretical concepts and trends in medicine;
- to plan and participate in (in compliance with the relevant rules) experiments on animals; to process and analyze the results of experiments, to properly understand the importance of the experiment for the study of clinical forms of pathology;
- interpret the results of the most common diagnostic methods;
- solve situational problems of various types;
- to register ECG and determine the main types of arrhythmias, signs of ischemia and myocardial infarction;

- to evaluate the cellular composition of inflammatory exudate and phagocytic activity of leukocytes;
- to analyze the leukocyte formula of neutrophils and on this basis to formulate a conclusion about the changes in it;
- to formulate a conclusion on the hemogram of the presence and form of a typical form of pathology of the blood system;
- to analyze the indicators of the coagulogram and on this basis to make a conclusion about the changes in it;
- to determine the typical forms of violation of gas exchange function of the lungs in terms of alveolar ventilation, gas composition of blood and blood flow in the lungs;
- to differentiate pathological types of breathing and explain the mechanisms of their development;
is to characterize a model of impaired renal function according to blood tests, urine tests and clearance tests;
- differentiate different types of yolks;
- to assess the acid-base state (CBS) and to draw conclusions about the various types of violations;
- differentiate different types of hypoxia;
- identify typical violations of secretory function of the stomach and intestines according to the analysis of gastric and intestinal contents;
- interpret the results of the main diagnostic allergic tests;
- to justify the principles of pathogenetic therapy of the most common diseases.

The total complexity of the discipline is-9 credits (324 hours).
Semester: 5,6.
The main sections of the discipline:

1. Introduction. Subject, sections and methods of pathophysiology. Basic concepts of General nosology.
2. Pathogenic effect of external and internal environmental factors.
3. Typical violations immunogenic reactivity. Immunopathological conditions (Allergy, immune autoagression conditions and diseases, immunodeficiency States, pathological tolerance).
4. Typical disorders of organ-tissue circulation and microcirculation.
5. Pathophysiology of inflammation.
6. Pathophysiology of acute phase response. Fever. Hyper-and hypothermia.
7. Pathophysiology of hypoxia and hyperoxia.
8. Typical forms of metabolic disorders.
9. Typical forms of pathology of the blood system.
10. Typical forms of pathology of the circulatory system.
11. Typical forms of pathology of gas exchange lung function.
12. Typical forms of digestive disorders in the stomach and intestines. Ulcer.
13. Liver failure. Jaundices.
14. Typical forms of kidney pathology.
15. Typical forms of pathology of the endocrine system.
16. Stress and its importance in pathology.
17. Typical forms of pathology of the nervous system and higher nervous activity
18. The pathophysiology of the infectious process. Inflammation.
19. Immunopathophysiology.
20. Pathophysiology of the hemostatic system.
21. Pathophysiology of the cardiovascular system.
22. Pathophysiology of hypoxia. Chronic obstructive pulmonary disease.
23. Pathophysiology of extreme conditions.
24. Chronobiology, chronomedicine, biorhythms.

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