МЕДИЦИНСКИ УНИВЕРСИТЕТ – СОФИЯ
Medical University - Sofia
МЕДИЦИНСКИ ФАКУЛТЕТ
Faculty of Medicine – Deans's Office

PATHOANATOMY CURRICULUM

The curriculum has been adopted at the meeting of the Faculty Council 36/28.11.2019

Annotation.

Pathoanatomy course is an important element of pharmacy students' knowledge of general nosological processes in organs and tissues, and their injuries associated with administration of different pharmaceutical drugs.

Main tasks of the study programme and expected outcomes

The goal of Pharmacy students' Pathoanatomy course is broadening their theoretical and practical knowledge on:

1. Tasks, methodology and subject of the discipline.
2. Concise information on the basic and universal pathoanatomical nosological changes on ultrastructural, light microscopy and gross levels.
3. Recognition of basic pathoanatomical findings in organs and systems in different diseases as nosological entities.
4. Recognition on pathoanatomical level of tissue and organ injury associated with administration of drugs (e.g. "drug-induced pathology").
5. Experimental pathology including information about preclinical studies and tests on laboratory animals for the sake of clinical medicine, including tests of pharmaceutical drugs.

Seminars and lectures curriculum:

1. The subject of pathology. Methods in the general and clinical pathology. Autopsy and Biopsy methods. Morphology of cellular injury. Reversible cellular injury /degeneration/. Reversible cellular injury – intracellular accumulation of glycogen, proteins and pigments. Storage diseases. Lipidoses. Atherosclerosis. Pathology of extracellular matrix and connective tissue / hyalinosis, amyloidosis, calcinosis, gout.
2. Irreversible cellular injury. Necrosis – types. Apoptosis.
3. Inflammation. Mediators and cellular events in inflammation. Acute inflammation. Morphologic patterns. Chronic inflammation. Morphologic patterns. Granulomatous inflammation. Pathology of the immune response. Transplantation.
4. Compensatory reactions. Hypertrophy, hyperplasia and metaplasia.
5. Tumors – general features. Molecular basis of cancerogenesis. Nomenclature. Benign and malignant epithelial tumors. Benign and malignant mesenchymal tumors. Other tumors – pigmental, neural system.
6. Malformations in the development of the organism. Congenital anomalies. Classification. Exogenous and endogenous teratogens.. Embriopathy and phetophy disorders. Ethiological factors.
7. Side organ effects of drugs. Medicinal disease.

Syllabus for theoretical semester exam

1. Subject and methods of pathology: autopsy, biopsy, necropsy.
2. Experimental models in pathology and clinical pharmacotherapy.
3. General characteristics of cell injury and extracellular matrix changes.
4. Etiology and pathogenesis of cell injury. Classification forms.
5. Etiology and pathogenesis of extracellular degenerative processes. Types.
6. Abnormal accumulations and disorders of substances in cells. Common features.
7. Parenchymal fatty degeneration.
8. Mesenchymal fatty degeneration.
9. Abnormal accumulations of pigments in cells. Endogenous and exogenous pigments. Types.
10. Accumulation of hemoglobinogenic pigments. Hemosiderin. Hemosiderosis.
11. Hemoglobinogenic pigments: bilirubin. Types of jaundice.
12. Disorders of melanin accumulation.
13. Exogenous pigments. Types. Drug-induced pigment disorders.
14. Abnormal accumulations in the extracellular matrix. Classification types. Common features.
15. Fibrinoid accumulation. Types.
16. Accumulation of hyaline and amyloid.
17. Cell death (necrosis). Definition, causes, types.
18. Apoptosis.
19. General characteristics of disorders of the peripheral circulation. Arterial and venous hyperemia. General organ changes.
20. Arterial hyperemia. Types.
21. Venous hyperemia. Acute and chronic. Pathological changes in the lungs and liver.
22. Anemia.
23. Thrombosis. Structure and types of thrombosis. Exit of thrombosis.
24. Embolism. Characteristics of arterial and venous embolism. Organ disorders in different types of embolism.
25. Infarction. Definition. Types of infarction by localization: myocardium, brain, lung.
26. Bleeding. Types by mechanism and localization of bleeding.
27. Tissue fluid circulation disorders. Swelling.
28. Inflammation. General characteristics of the phases of inflammation.
29. Exudative inflammation. Types according to morphological characteristics and cellular composition.
30. Chronic inflammation. Common features. Cell types involved in proliferative inflammation.
31. Specific inflammation. Tuberculosis, syphilis, rheumatism.
32. Compensatory and reparative processes. Common features: hypertrophy, atrophy, regeneration.
33. Hypertrophy. Types.
34. Atrophy. Types.
35. Metaplasia: direct and indirect. Prosoplasia and anaplasia.
36. Regeneration. Common features. Cell types depending on their growth potential.
37. Regeneration of different tissue types.
38. Tumors. Definition, etiology and pathogenesis of tumors.
39. General characteristics of benign and malignant tumors. Classification names.
40. Macroscopic appearance and microscopic structure of tumors.
41. Benign and malignant epithelial tumors.
42. Connective tissue (mesenchymal) tumors. Benign and malignant.
43. Neoplastic diseases of hematopoietic and lymphatic tissue: leukemias, lymphomas.
44. Precancerous conditions.
45. Developmental disorders. Etiological factors.
46. Developmental disorders. Types of embryonal and fetal disorders.

47. Drug-induced injuries of the human body.
48. Drugs affecting the central nervous system.
49. Side organ effects of antihistamine and anti-serotonin drugs.
50. Side organ effects of cardiac glycosides, antiarrhythmic and antihypertensive drugs.
51. Side effects of beta-adrenergic blockers and diuretics.
52. Side effects of corticosteroids.
53. Side effects of sex hormones and oral contraceptives.
54. Side effects of antibiotics.
55. Side effects of sulfonamides and other antibiotics.
56. Side effects of immunosuppressive and cytostatic agents.
57. Medicinal disease.

Academic literature:

1. Robbins and Cotran pathologic basis of diseases. 9th ed. 2017.