GENERAL PATHOLOGY AND PHYSIOPATHOLOGY

PROGRAM

General Pathology

**Genetic disorders:** mutations, mendelian disorders, disorders with multifactorial inheritance, normal karyotype, cytogenetic disorders, single-gene disorders with nonclassic inheritance. Diagnosis of genetic diseases.


**Subcellular responses to injury:** lysosomal catabolism (heterophagy, autophagy); hypertrophy of smooth endoplasmic reticulum; mitochondrial alterations; cytoskeletal abnormalities. Intracellular accumulations: lipids, proteins, hyaline change, glycogen, pigments (exogenous pigments, endogenous pigments); pathologic calcification (dystrophic calcification and metastatic calcification). Thesaurismosis.

**Cellular aging:** structural and biochemical changes with cellular aging, replicative senescence, genes that influence the aging process, accumulation of metabolic and genetic damage.

**Amyloidosis**
General features of inflammation:

**Acute inflammation**: historical highlights, stimuli for acute inflammation; vascular changes (changes in vascular flow and caliber, vascular leakage); cellular events: leukocyte extravasation (leukocyte adhesion and transmigration) and phagocytosis.


Chemical mediators of inflammation: vasoactive amines, plasma proteins, arachidonic acid metabolites: prostaglandins, leukotrienes, and lipoxins, platelet-activating factor (PAF), cytokines and chemokines, nitric oxide (NO), lysosomal constituent of leukocytes, oxygen-derived free radicals, neuropeptides. Disorders of the complement system.

Outcomes of acute inflammation. Morphologic patterns of acute inflammation

**Chronic inflammation**: causes of chronic inflammation, morphologic features, mononuclear cell infiltration, cells in chronic inflammation. Granulomatous inflammation, lymphatics in inflammation.

Systemic effects of inflammation, consequences of defective or excessive inflammation.


Overview of repair responses after injury and inflammation


Epidemiology: cancer incidence, geographic and environmental factors, genetic predisposition to cancer, chronic inflammation and cancer, precancerous conditions.


Molecular basis of multistep carcinogenesis gatekeeper and caretaker genes. Tumor progression and heterogeneity.


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**Program**

**Physiopathology**


**Heart physiopathology**: heart failure, cardiac hypertrophy: pathophysiology and progression to failure. Ischemic heart disease. Angina pectoris. Myocardial infarction.

**Hypertension. Atherosclerosis**: risk factors for atherosclerosis, pathogenesis.


**Bleeding Disorders**: Hemorrhagic diatheses. Hemostatic Disorders of Blood Vessels, Platelet Disorders Coagulopathies, Hypercoagulability
## PROGRAM
### Technical Sciences of Laboratory Medicine

<table>
<thead>
<tr>
<th><strong>Diseases of white blood cells:</strong></th>
<th>leukopenia. Neoplastic proliferations of white cells.</th>
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<tbody>
<tr>
<td><strong>Lung physiopathology:</strong></td>
<td>Atelectasis. Obstructive pulmonary diseases.</td>
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<td><strong>Liver physiopathology:</strong></td>
<td>Acute renal failure, chronic renal failure and uremia</td>
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<td><strong>Endocrine system physiopathology:</strong></td>
<td>Pituitary gland, thyroid gland, parathyroid glands, endocrine pancreas (diabetes mellitus and pancreatic endocrine tumors), adrenal glands.</td>
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<td><strong>Technical Sciences of Laboratory Medicine</strong></td>
<td>Diagnostic approach in laboratory. General examples of research techniques applied to diseases diagnosis.</td>
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## Textbooks

- Robbins & Cotran, Pathologic Basis of Disease.
- Rubin's Pathology: Clinicopathologic Foundations of Medicine.

## EXAM METHOD

- Oral exam.

## EXAM COMMISSION

<table>
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