Promotion exam topic
Position 8 of Department of Preclinical Disciplines

1. Disease definition. Etiology. Stages of disease development. Clinical and biological death; reanimation principles.
2. General pathogenesis. Pathogenesis. Definition. Concepts of pathogenesis. Concepts about stress; general adaptation syndrome (Selye); vegetative irritative syndrome (Reilly); psycho-somatic design. Information disorder mechanisms; regulation of neuroendocrine function disturbances; pathogenetic molecular mechanism, biochemistry.Significances of pain; endorfine role.
3. Cellular pathology. Cellular membrane pathology; abnormal receptors, transport mechanisms, changes in cellular membrane structure affecting the functions performance. Cellular organelles pathology: mitochondria, endoplasmic reticulum (smooth and rough), Golgi complex, lysosoms. Intracellular matrix.
4. Cellular malignant transformation. Etiology of cancer, carcinogenic factors (physical, chemical, biological oncogenic viruses, endogenous genetic factors, hormonal, and metabolic influences). Cancer pathogenesis. Carcinogenic inducing factors' action, promoters. Malignant particularities during cell transformation. Metastasis. Paraneoplasic syndrome.
5. Pathophysiology of inflammation I. Definition, etiological agents. Vascular changes mechanisms; vasoactive mediators': amino acids derivates, by enabling protease lipidic mediators' system; the role of cytokines.
6. Pathophysiology of inflammation II. Acute phase reaction: fever - mechanism of production, acute phase proteins, leukocytosis, functional and metabolic changes.
7. Metabolic disturbances. The metabolism. The main metabolic pathways in cellular compartments. ATP production during intermediary metabolism. Enzymes' kinetic, induction and protein biosynthesis. Carbohydrate metabolism I. Disturbances of carbohydrate metabolism: glycolysis, gluconeogenesis, pentose phosphate cycle glucuronic acid cycle, glycogenogenesis, glycogenolysis.
8. Carbohydrate metabolism II. Pathogenesis of diabetes mellitus type I and II, hypoglycemia.
9. Protein metabolism. Quantitative alterations of proteins. Amino acid disorders. Metabolic blocks.
10. Lipid metabolism. Lipid disorder: fatty acids, triglycerides, cholesterol. Plasmatic lipid transport, metabolism of lipoproteins, primary hyperlipoproteinemias, primary and secondary lipidosis, hyperlipoproteinemia and atherosclerosis, hypolipoproteinemia.
11. Red blood cell disorders I. Pathophysiology of erythropoiesis. Anemias – mechanisms of production: iron – deficiency anemia, megaloblastic anemia, haemolytic anemia, aplastic anemia.
12. Red blood cell disorders II. Polycythemia. Mechanism of production, classification.
13. Haemostasis disorders I. Vasculopathies: mechanism of production. Qualitative and quantitative alterations of platelets.
14. Haemostasis disorders II. Coagulopathies. Alterations of fibrinolysis. Thrombosis.
15. Disorders of fluid and electrolyte balance. Regulation of fluid and electrolyte balance. Dehydration: hyper-, hypo, and isotonic. Hyperhydration: hyper-, hypo-, and isotonic. Alteration of Kalium balance.
16. Disorders of magnesium, calcium and phosphate balance
17. Disorders of acid – base balance. Regulation of acid-base balance. Metabolic and respiratory acidosis. Metabolic and respiratory alkalosis.
18. Pathophysiology of selected renal diseases I. Acute and chronic kidney diseases.
19.Pathophysiology of selected renal diseases II. Glomerular disorders. Tubulo-interstitial disorders
20. Pathophysiology of selected respiratory diseases I. Hypoxia. Cianosis. Bronchiectasis. Atelectasis. COPD
2**1. Pathophysiology of selected respiratory diseases** II. Pulmonary hypertension. Pulmonary edema. Respiratory failure. ARDS.
22. Pathophysiology of selected cardiovascular diseases I. Heart failure. The pathogenetic mechanism. Compensatory mechanisms. Systolic and diastolic dysfunction.

23. Pathophysiology of selected cardiovascular diseases II. Primary and secondary hypertension
24. Pathophysiology of shock. Etiopathogenetic classification. Stages of circulatory shock. Compensatory mechanisms. Changes in the microcirculation. SIRS.MODS.
25. Pathophysiology of gastrointestinal tract diseases. Clinical manifestations of GI disorders. Disorders of motility. Ulcerative disorders. Disorders of intestinal absorbtion. Disorders of the small and large intestines.
26. Pathophysiology of selected liver and gallbladder diseases. Jaundice. Cholelithiasis. Cholecystitis. Hepatitis. Cirrhosis. Portal hypertension. Liver failure.

REFERENCES

1. Dănilă MD, Aburel OM, Sturza A. Pathophysiology –Lecture notes for medical students. Editura „Victor Babeș", Timișoara, 2023
2. Gary D. Hammer, Steven J. McPhee. Pathophysiology of Disease. An Introduction to Clinical Medicine. McGraw Hill Medical, 8th Ed, 2019
3. Norris TL. Porth's Pathophysiology. Concepts of Altered Health States, Wolters Kluwer, Lippincot Wiliams&Wilkins, Philadelphia, 10th Ed., 2019
4. McCance KL, Huether SE. Understanding Pathophysiology, 7th Ed., Elsevier, Mosby, Saunders, 2019
6. Stefan Silbernagl, Florian Lang. Color Atlas of Pathophysiology, Ed. Thieme, 3rd Edition.

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