TOPICS FOR FINAL EXAMINATION FROM PATHOLOGICAL PHYSIOLOGY FOR DENTAL MEDICINE

GENERAL PATHOLOGICAL PHYSIOLOGY

1. NOSOLOGY

1. Health and disease (definitions, forms of pathological processes, stages and outcomes of diseases
2. Terminal states, dying, clinical, biological and brain death; vegetative state
3. Cardiopulmonary-cerebral resuscitation, postresuscitation disease;
4. Aging – characteristics, hypothesis, aging related diseases (aging in oral cavity)

2. ETIOLOGY

A.Physical factors

1. Effects of mechanical energy (blast & crush syndrome); Mechanical damage in oral cavity – causes, symptoms
2. Effects of acceleration, gravitation, kinetosis, G overload and weightless states on human body
3. Influence of electrical current and electromagnetic field on human body; effects in oral cavity
4. Effects of elevated and decreased pressure on human body, divers' disease; effects in oral cavity
5. Effects of ionising radiation – somatic and genetic effects; Acute and chronic radiation disease
6. Hyperthermia (incl. sunstroke) – forms, manifestation; Hypothermia– forms, manifestations
7. Local thermal injury - burns & chilblains: forms, stages; Burns and chills in the oral cavity

B.Chemical factors

1. General classification of intoxications, intake, distribution (heavy metals; pollutants; CO,
2. Chemical injury in the oral cavity – food, desinfectives,metals, etc.: manifestations
3. Effect of smoking and alcohol in the body; Alcohol addiction & related disorders Alcohol & smoking in oral cavity

C. Nutritional factors

1. Short term starvation; Undernutrition, malnutrition (cachexia, kwashiorkor); Application in dentistry
2. Obesity – causes,measures, forms; Associated disorders, insulin resistance
3. Disorders in iron metabolism, deficit and excess of iron; Application in dentistry
4. Disorders in trace elements metabolism – metals (except iron) and non-metals
5. Water- soluble vitamins – systemic effects of deficiencies ; Application in oral cavity
6. Fat - soluble vitamins – systemic overdose and deficiency; Application in oral cavity

D. Genetic factors

1. Mutations – causes, classification; terminology - hereditary, congenital, familiar, genetic disorders
2. Genetics of diseases in general; Mutations–classif., causes; Dis.: genetic, hereditary, inborn; epigenetics
3. Monogenic diseases – autosomal dominant, recessive & gonosomal – cause, principles; Appl. in oral cavity
4. Non-mendelian heredity – imprinting, mitochondrial dis., dynamic mutations (principles, examples)
5. Chromosomal aberrations – structure and numberic alter. of autosomes and gonosomes; Appl. in dentistry

3. PATHOGENESIS

E. Typical pathological processes and manifestations

1. Pain – forms, neurophysiology; Acute and chronic pain; neuralgia, headache; Appl. in dentistry
2. Stress – neurohumoral mechanisms; maladaptation, stress related diseases
3. Shock – pathogenesis; forms: anaphylactic, septic, hypovolemic, cardiogenic, etc.
4. Disorders of consciousness – classification, pathogenesis, quantitative and qualitative disorders
5. Coma - evaluation, scales; Etiology: cerebral damage and extracerebral diseases;
6. Edema, transudate and exudate; systemic disorders, Application in dentistry
7. Hypoxia –principles, compensation; Forms – overview, examples

F. Inflammation

1. Acute inflammation – general description, forms; humoral factors (classe, funktion; acute phase response,
2. Acute inflammation - cellular response (incl. leukocyte defects, APC)
3. Chronic inflammation, granulomatous inflammation
4. Fever – forms, manifestation; Examples: systemic; Fever from affection in oral cavity

G.Disorders of immunity

1. Immune deficiency states, AIDS (incl. manifestations); Application in dentistry
2. Autoimmune disorders (principle, systemic examples); Application in dentistry
3. Hypersensitivities - types, principles, systemic diseases; Application in dentistry

H. Disorders of inner milieu

7. Disorders of electrolyte metabolism – water, sodium, potassium
8. Disorders of electrolyte metabolism – calcium, phosphate; Application in dentistry
9. Disorders of acid-base balance –classification, compensation; Application in dentistry

I.Oncology

1. Tumours – epidemiology; characteristics; benign, malignant; tumour markers; Application in dentistry
2. Tumours – etiopathogenesis, carcinogens, viruses; oncogens, protooncogens

SPECIAL (SYSTEMIC) PATHOLOGICAL PHYSIOLOGY

A. CARDIOVASCULAR SYSTEM

1. Heart failure – classification; pressure & volume overload, low-output failure, compensatory mech.
2. Left and right heart failure - causes; symptoms, manifestations, compensatory mechanism
3. Arterial hypertension – classification, etiopathogenesis; Primaru and secondary forms; organ consequences
5. Systemic arterial hypotension and syncopal states
6. Atherosclerosis - etiopatogenesis, risk factors, manifestations
7. Coronary heart disease - definition, classification and risk factors of
8. Acute coronary syndrome – definition, etiology, symptoms
9. Angina pectoris – stabile and unstable; common and different signs
10. Myocardial infarction – diagnostics, complication
11. Cardiomyopathies
12. Inborn cardiac defects with cyanosis and without cyanosis
13. Acquired valvular disorders – causes (tooth focuses - endocarditis); mitral stenosis and insufficiency
15. Acquired valvular disorders – causes (tooth focuses - endocarditis); aortic stenosis and insufficiency
16. Dysrhythmias – electrophysiology, etiolopatogenesis, classification,
17. Bradyarrhytmias and conductive disorders
18. Tachyarrhytmias – atrial and venricular; flutter, fibrillation, extrasystoles, partoxysmal tach.

B. RESPIRATION

1. Disorders of pulmonary circulation - Pulmonary hypertension
2. Respiratory insufficiency – partial and global; acute and chronic; causes, manifestations
3. Obstructive respiratory disorders – classification, characteristics; Application in dentistry
4. Restrictive respiratory diseases – classification, characteristics
5. Bronchial asthma – forms, manifestation; Applications in dentistry
6. Chronic obstructive bronchopulmonary disease (COPD)- forms, manifestations,
7. Pulmonary edema – mechanism, causes; respiratory distress syndrome in adults (ARDS) and kids (IRDS)

C. HEMATOLOGY

1. Anaemia – classification, symptomatology, compensatory mechanisms; Application in dentistry
2. Anemias from blood loss / destruction - hemorragic, hemolysis; Application in dentistry
3. Anemias from impaired Ery production; sideropenic siroblastic, megaloblastic; Application in dentistry
4. Hemorrhagic diathesis – vessel wall abnormalities, thrombocytes abnormalities
5. Inherited and acquired disorders of coagulation, DIC, Application in dentistry
6. Thromboembolism, inherited thrombophilia; Application in dentistry
7. Non-leucemic diseases of leucocytes (according to difer. caunt WBC; incl. agranulocytosis)
8. Myeloid and lymphoid leucemias

D. NERVOUS SYSTEM

1. Motor disorders – mechanism, terminology, symptomatology
2. Upper and lower motor neuron syndromes (palsy, paralysis); facial palsy Application in dentistry
3. Extrapyramidal disorders and cerebellar motor disorders
4. Spinal shock, spinal syndromes, hemisyndrome
5. Somatosensory disorders – classification; symptomatology; Application in dentistry
6. Demyelinising disorders – general characteristics; Multiple sclerosis
7. Neurodegenerative diseases (Parkinson disease and others)
8. Alzheimer disease and others dementia
9. Epilepsy - classification, manifestation; Status epilepticus, Application in dentistry
10. Pathophysiology of neuromuscular disorders- overview (Myasthenia gravis, Duchenne dis.)
11. Disorders of vegetative nervous system
12. Brain edema and intracranial hypertension; subdural and subarachniodal bleeding
13. Cerebrovascular disorders – stroke; haemorrhagic, ischemic; manifestations Application in dentistry

E. KIDNEY AND URINARY TRACT

1. Acute renal failure - causes, manifestations
2. Chronic renal failure – causes, manifestations; Uremia, Application in dentistry
3. Glomerulopathies - classification, manifestations; Nephritic and nephrotic sy.
4. Tubulointerstitial kidney disorders and pyelonephritis (acute, chronic)
5. General manifestations and causes of kidney diseases (in. hematuria, proteinuria); Urolithiasis

F. ENDOCRINOLOGY AND DIABETES

1. General etiology and classification of endocrine diseases
2. Disorders in hypothalamo-pituitary gland system. Hyperpituitarism, hypopituitarism
3. Hyperthyroidism and hypothyroidism, goiter
4. Hypopartahyroidism, hyperparathyroidism; Application in dentistry
5. Hypocorticism and hypercorticism (Cushing and Addison disease) ; Application in dentistry
6. Primary and secondary hyperaldosteronism
7. Diabetes mellitus – etiopathogenesis, classification; Application in dentistry
8. Pathogenesis of diabetes mellitus type 1; causes, manifestations, ketosis
9. Pathogenesis of diabetes mellitus type 2; causes, manifestations, insulin resistence
10. Acute complications of diabetes mellitus; hypoglycemia, hyperglycemia
11. Chronic complication of diabetes mellitus; Application in dentistry

G. GASTROINTESTINAL SYSTEM, LIVER, PANCREAS AND GALL BLADDER

1. Manifestations of systemic diseases in oral cavity
2. Pathophysiology of oesophagus, reflux disease, dysphagia; Application in dentistry
3. Malabsorption and maldigestion; Celiac disease; Application in dentistry
4. Constipation, diarrhoea; irritable bowel syndrome; entherorrhagia
5. Peptic ulcer disease of stomach and duodenum - etiopathogenesis
6. Crohn disease, ulcerative colitis; Application in dentistry
7. Acute and chronic pancreatitis; pancreatic insufficiency
8. Disorders of gall bladder and bile ducts
9. Icterus – characteristics, types, manifestations; Application in dentistry
10. Hepatic insufficiency – liver cirrhosis, portal hypertension, ascites; Application in dentistry

H. DISORDERS OF BONES AND JOINTS

1. Osteoporosis and osteomalacia; vitamin D insufficiency; Application in dentistry
2. Rheumatoid arthritis and arthritis urica (gout)