

Topics no. 2 : Hematology

Supervisor: Dr. P. Klener

Topics:

- 1) Bone marrow suppression
- 2) Iron deficiency anemia
- 3) Pernicious anemia (vitamin B₁₂ and folic acid deficiency)
- 4) Pure Red Cell Aplasia
- 5) Intracorpuscular hemolytic anemias due to the disorders of cell membrane
- 6) Sickle cell anemia
- 7) Thalassemia
- 8) Paroxysmal nocturnal hemoglobinuria
- 9) Extracorpuscular hemolytic anemias
- 10) Methaemoglobinaemia
- 11) Anemia due to the acute blood loss
- 11B) Anemia due to the chronic blood loss
- 12) Primary and secondary polycythaemia
- 13) Hypersplenism
- 14) Disorders of granulocytes
- 15) Disorders of granulocyte function
- 16) Thrombocytopenia
- 17) Thrombocytopathies
- 18) Haemolytic jaundice
- 19) Anemia of chronic disease
- 20) Intracorpuscular hemolytic anemias due to metabolic disorders
- 21) Hemoglobinopathies (excluding thalassemia and sickle cell anemia)

Topics no. 8: Cardiology

Supervisor: doc. M. Vokurka

Topics:

- 22) Acute left heart failure
- 23) Acute right heart failure
- 24) Chronic left heart failure
- 25) Chronic right heart failure
- 26) Pathogenesis of primary hypertension
- 27) Secondary hypertension mechanisms
- 28) Arterial hypotension
- 29) Disturbances of myocardial perfusion
- 30) CHS – angina pectoris
- 31) CHS – acute myocardial infarction
- 32) Hypertrophic cardiomyopathy
- 33) Dilatation and restrictive cardiomyopathy
- 34) Consequences of ionic disturbances in myocardium
- 35) Pathogenesis of cardiac edema
- 36) Review of compensatory mechanisms in heart failure
- 37) Fluid retention and ionic changes in congestive heart failure (causes, mechanisms)
- 38) Pathophysiology and measurement of cardiac output
- 39) Pathophysiology and measurement of enddiastolic pressure
- 40) Mitral stenosis and insufficiency
- 41) Aortic stenosis and insufficiency
- 42) Right-to-left and left-to-right shunts
- 43) Tricuspidal stenosis and insufficiency
- 44) Pulmonary stenosis and insufficiency
- 45) Pathogenesis of pulmonary hypertension
- 46) Primary pulmonary hypertension
- 47) Cor pulmonale

Topics no. 10: Pneumology/ respiration

Supervisor: doc. M. Vokurka

Topics:

- 48) Chronic obstructive pulmonary disorder – classification
- 49) Emphysema
- 50) Bronchial asthma
- 51) Pulmonary fibrosis
- 52) Aspiration of foreign bodies, drowning
- 53) Pneumothorax, lung collapse and lung atelectasis
- 54) Tumors and metastases in the lungs
- 55) Pneumoconiosis
- 56) Dyspnea (types, causes)
- 57) Disorders of alveolar ventilation
- 58) Effect of smoking on the respiratory system
- 59) Pneumothorax
- 61) Surfactant and its disorders
- 62) Lung compliance and its disorders
- 63) Respiratory resistances in pulmonary diseases
- 64) Adult respiratory distress syndrome
- 65) Mechanisms of bronchial obstruction
- 66) Methods of investigation of bronchial obstruction
- 67) Hypoxemia
- 68) Hypocapnia
- 69) Hypercapnia
- 70) Circulatory effects of pulmonary diseases
- 71) Oxygenotherapy

Topics no. 12: Nephrology

Supervisor: dr. Z. Humlová

Topics:

- 72) Autosomal dominant polycystic kidney disease
- 73) Hereditary and acquired tubulopathies
- 74) Renal tubular acidosis and Bartter's syndrome
- 75) Nephrotic syndrome
- 76) Acute glomerulonephritis
- 77) Chronic glomerulonephritis
- 78) Diabetic nephropathy
- 79) Urolithiasis
- 80) Causes of renal failure
- 81) Acute renal failure
- 82) Chronic renal failure
- 83) Oligoanuria, polyuria
- 84) Hemodialysis and its complications
- 85) Hemoperfusion peritoneal dialysis.
- 86) Subacute glomerulonephritis
- 87) Proteinuria
- 88) Autosomal recessive polycystic kidney disease
- 89) Urosepsis
- 90) Gout, nephropathy in high uric acid
- 91) Analgesic nephropathy
- 92) Hydronephrosis
- 93) Kidney transplantation, transplant rejection
- 94) Renal and renovascular hypertension

Topics no. 17.: Endocrinology I.

Supervisor: prof. P. Maruna

Topics:

- 95) Diabetes insipidus
- 96) Hypopituitarism
- 97) Dwarfism and growth hormone deficiency in adults (GHDA)
- 98) Acromegaly and gigantism
- 99) Prolactinoma
- 100) Overproduction of pituitary hormones
- 101) Goiter
- 102) Hyperthyroidism
- 103) Graves-Basedow disease
- 104) Hypothyroidism
- 105) Inflammation of the thyroid gland
- 106) Primary hyperparathyroidism
- 107) Secondary and tertiary hyperparathyroidism
- 108) Hypoparathyroidism
- 109) Acute adrenocortical crisis
- 110) Addison's disease
- 111) Iatrogenic hypocortisolism
- 112) Hypercortisolism – Cushing's syndrome
- 113) Primary hyperaldosteronism (Conn's syndrome)
- 114) Secondary hyperaldosteronism
- 115) Pheochromocytoma
- 116) Secondary hypertension due to endocrine disorders
- 117) Carcinoid, amine precursor uptake and decarboxylation (APUD) system

Topics no. 29: Neurology

Garant: doc. P. Maršálek

Témata:

- 118) Sleep apnea, Pickwick syndrome
- 119) Myasthenia gravis
- 120) Myopathies (classification and examples of pathogenesis)
- 121) Duchenne muscular dystrophy
- 122) Peripheral and central paresis and paralysis (comparison)
- 123) Spinal cord dorsal horn diseases
- 124) Pathogenesis of neuro-boreliosis and tick encephalitis
- 125) Wilson's disease
- 126) Huntington's chorea and Sydenham's chorea
- 127) Parkinson's disease
- 128) Alzheimer's disease
- 129) Narcolepsy
- 130) Disorders of consciousness
- 131) Headache – classification
- 133) Mechanisms of pain modulation
- 134) Sclerosis multiplex
- 135) Ischemic cerebral stroke
- 136) CNS hemorrhage
- 137) Cochlear implants
- 138) Intracranial hypertension
- 139) Transversal spinal cord lesions
- 140) Peripheral nerve transection, micro-surgery, regeneration
- 141) CNS Trauma
- 142) Migraine

Topics no. 31: Gastroenterology

Supervisor: doc. J. Živný

Topics:

- 143) Acute pancreatitis
- 144) Chronic pancreatitis
- 145) Pancreatic insufficiency
- 146) Pancreatic carcinoma
- 147) Classification and diagnostics of icterus
- 148) Hepato-celullar icterus
- 149) Obstructive icterus
- 150) Mechanisms and etiology of portal hypertension
- 151) Ascites
- 152) Hepato-renal syndrome
- 153) Fatty liver disease, alcoholic and non-alcoholic, non-alcoholic steato-hepatitis, NASH
- 156) Chronic hepatitis, classification
- 157) Liver cirrhosis
- 158) Encephalopathy in liver diseases
- 159) Hepatocellular carcinoma
- 160) Biliary cirrhosis (primary, secondary)
- 161) Familial hyperbilirubinemia
- 162) Gallstones
- 163) Cholangitis, choledochus stenosis and carcinoma
- 164) Systemic circulation changes in portal hypertension
- 165) Liver damage caused by alcohol
- 166) Cystic fibrosis
- 167) Acute hepatitis
- 168) Hematological changes in liver failure
- 169) Hepatic poisoning (amanitin, phaloidin, paracetamol overdose, etc.)
- 170) Effects of liver failure to internal milieu