***Thematic Plan of Practical Lessons/Seminars in Cardiology Discipline for Students of the IV Year, Medicine 2, the Academic Year 2025-2026, the autumn semester**

Minutes notice of the Department Meeting nr.1, from 25 August 2025

Nr.	Tema	Ore
1.	**Patients curation.** Clinical examenation of the patient with cardiovascular pathology. Basic knowledges evaluation in the anatomy and phisiology of cardiovascular system.	4
2.	**Cardiovascular noninvazive and invazive explorations.** ECG effort test. Stress ECG, psihoemotional, izometric, in cold tests. Indications and contraindications of the Holter monitoring ECG and AT.	4
3.	**Invasive cardiovascular explorations.** Seminar in the MedPark hospital Biological evaluation: laboratory tests, seric biomarkers (miocite injury biomarkers, inflammation, oxidative stress, neuro-hormones, miocitar stress, remodilation of the extracellular matrix). ECG tests of the pharmacologic stress. Indications and contraindications. Cardiac computer tomography. CT coronarian angiography with the contrast substance. Cardiac CT with the evaluation of the cardiac cavities, pericardium and big vessels. Cardiac magnetic resonance, coronarian and big vessels. Cardiac catheterism and angiography. Left ventriculography. Aortography. Coronaroangiography. Indications.	4
4.	**Preventive cardiology. Cardiovascular risk factors.** Classical cardiovascular risk factors (age, sex, heredity, obesity, sedentariness, smoking, alcohol, HT, DLP) and recently described (homocysteine, lipoprotein (a), proinflammatory factors, prothrombotic factors). CV risk scores. Preventive cardiology. Primary prophylaxis. Prevention strategy for population and high risk population. Estimated overall risk according to the SCORE scale. Secondary prevention.	4
5.	**Dyslipidemia. Atherosclerosis.** Definitions. Blood lipids. Triglycerides. Fatty acids. Phospholipids. Cholesterol. Apoproteins. Lipoproteins. Enzymes involved in lipid metabolism. Receptors for lipoproteins. Metabolism of lipoproteins. Dyslipidemia as a risk factor for ischemic heart disease. Dyslipidemias and atherosclerosis. Etiopathogenesis of dyslipidemias. Classification of hyperlipoproteinemias. Diagnosis, treatment and prophylaxis of hyperlipoproteinemias. Non-pharmacological and pharmacological treatment.	4
6.	**Hypertension (HT).** Definition. Classification. Pathogenesis. Clinical examination and paraclinical explorations. Subclinical manifestations of target organ damage in HT. Assessment of global cardiovascular risk of the HT patient. The term "additional risk". Classical cardiovascular risk factors in HT. Afectarea subclinică de organ și diabetul zaharat. Boala cardiovasculară clinic manifestă. Subclinical organ damage and diabetes mellitus. Clinical manifestations of cardiovascular disease. „white-coat” Hipertension and ambulatory or „masked” Hypertension. Non-pharmacological and pharmacological treatment. Monotherapy and combined therapy. HT treatment in special situations: in elderly, young, pregnant, diabetes mellitus. Resistant HT. Treatment. Cardiovascular rehabilitation	4

7.	**Hypertensive emergencies (HE).** Common (relative) and extreme (major vital risk) hypertensive emergencies. Accelerated-malignant HT with papillary edema. Acute hypertensive left ventricular insufficiency. HE associated with hypertensive encephalopathy, acute myocardial infarction or unstable angina, acute aortic dissection, subarachnoid hemorrhage or stroke. Preeclampsia, eclampsia. Perioperative HT. HE in the acute pheochromocytosis crisis, in case of drug use, in acute or chronic RI.	4
8.	**Ischemic heart disease. Stable angina.** Coronary circulation. Definitions. Classification. Structures of atherosclerotic lesions. Pathogenesis of atherosclerosis. The ischemic heart disease clinical mechanisms. Risk factors and prophylaxis. Stable angina. Definition. Pathogenesis. Clinical manifestations. Paraclinical investigations. Non-pharmacological and pharmacological treatment. Myocardial revascularization. Post-revascularization myocardial recovery. Microvascular angina (coronary X syndrome). Definition. Etiology. Clinical manifestations. Diagnostic. Treatment. Prognosis. Silent ischemia. Definition. Pathogenesis. Clinical picture. Diagnostic. Treatment. Prognosis. New ischemic syndromes (myocardial preconditioning, siderate and hibernating myocardium). Cardiovascular rehabilitation.	4
9.	**Acute coronary syndrome. Unstable angina. NSTEMI** Unstable angina. AP "de novo". Vasospastic AP. Aggravated AP. AP early post AMI. Microvascular AP. Definition. Pathogenesis. Clinical manifestations. Paraclinic Investigations. Acute myocardial infarction without ST segment elevation (NSTEMI). Clinical picture of the disease. GRACE; TIMI; EUROSCORE II scores; Paraclinic investigations. Early complications. Late complications. Treatment (general, medicamentous, interventional and surgical measures). Recovery in unstable angina. Cardiovascular rehabilitation.	4
10.	**Acute myocardial infarction, complications and treatment.** Acute ST segment elevation myocardial infarction. Clinical picture of the disease. Paraclinic investigations. Early complications. Late complications. AMI treatment. Reperfusion treatment. Additional treatment methods. AMI without ST elevation treatment. Post-myocardial infarction treatment. Sudden death. Cardiopulmonary and cerebral resuscitation (CUSIM). Criteria of restored vital signs. Transportation and hospitalization of the resuscitated patient. Management of postresuscital syndrome. Cardiovascular rehabilitation	4
11.	**Cardiac arrhythmias.** Electrophysiological mechanisms of arrhythmogenesis. Sinus tachycardia. Sinus bradycardia. Sinus arrhythmia. Atrial, junctional, ventricular extrasistole. Supraventricular paroxysmal tachycardia. Treatment and prophylaxis of supraventricular tachycardia paroxysms. Atrioventricular nodal reentry tachycardia. Atrial tachycardias. The atrial flutter. Treatment of paroxysmal atrial flutter. Atrial fibrillation. Treatment of atrial fibrillation. Ventricular tachycardia. Ventricular flutter and fibrillation. Ventricular preexcitation syndrome. Discussion of the ECG in each arrhythmia. Antiarrhythmics and pharmacological treatment of cardiac arrhythmias. Classification of antiarrhythmics. New	4

	antiarrhythmic drugs. Electrical therapy of cardiac arrhythmias. Implantable antiarrhythmic devices. The implantable cardiodefibrillator. Cardiac resynchronization therapy. Interventional electrophysiology. Ablative treatment in cardiac arrhythmias. Basic notions about biophysics of radio frequency energy. Arrhythmia surgery. Cardiovascular rehabilitation.	
12.	**Cardiac blocks.** Sinoatrial and atrioventricular blocks. Intraventricular conduction disorders. Right branch and left branch blocks of f. Hiss. Pathogenesis. Clinical manifestations. Classification. ECG Interpretation. Paraclinical Investigations. Non-pharmacological, pharmacological and interventional treatment. Implantable antiarrhythmic devices. Cardiostimulation and pacemaker implant. Cardiovascular rehabilitation.	4
13.	**Acquired valvulopathies.** Definition. Classification. Mitral stenosis. Mitral regurgitation. The mitral disease. Mitral valvular prolapse. Aortic stenosis. Aortic regurgitation. Stenosis and tricuspid regurgitation. Stenosis and pulmonary insufficiency. Hemodynamics. Clinical manifestations. Paraclinical Investigations. Possible complications in mitral stenosis. Differential diagnosis. Non-pharmacological, medical, interventional and surgical treatment. Choosing the artificial valve and supervising the prosthetic patient. Cardiovascular rehabilitation.	8
14.	**Infectious endocarditis.** Infectious endocarditis. Definitions. Classification. Etiology. Pathogenesis. Major and minor Duke Criteria. Clinical manifestations. Objective signs. Paraclinical Investigations. Differential diagnosis. Antimicrobial treatment. Surgical treatment. Prevention. Prognosis. Cardiovascular rehabilitation	4
15.	**Pathology of the pericardium. Syncope.** Pericardial syndromes. Definitions. Classification. Etiology. Acute pericarditis. Acute dry and exudative pericarditis. Chronic pericarditis. Constrictive pericarditis. Cardiac tamponade. Definitions. Classification. Clinical picture. Objective signs. Paraclinical Investigations. Treatment. Syncope. Classification. Clinical picture. Objective signs. Paraclinic Investigations. Treatment. Cardiovascular rehabilitation	4
16.	**Myocarditis.** Myocarditis. Definitions. Classification. Etiology. Pathogenesis. Clinical manifestations. Objective signs. Paraclinical Investigations. Acute, fulminant, chronic active and giant cell myocarditis. Non-invasive and invasive paraclinical evaluations. Endomiocardial biopsy for histology assessment, immunohistological analysis, and viral genome detection by molecular biology. Treatment. Prognosis. Cardiovascular rehabilitation	4
17.	**Cardiomyopathies.** Cardiomyopathies. Definitions. Classification. Dilated cardiomyopathy. Hypertrophic cardiomyopathy. Restrictive cardiomyopathy. Arrhythmogenic cardiomyopathy of the right ventricle. Definitions. Classification. Clinical picture. Objective signs. Paraclinic Investigations. Myocardial biopsy. Medical CMPD treatment. Resynchronization therapy. The implantable cardiodefibrillator. Cardiac transplantation. Interventional, medical CMPD	4

	treatment (septal ablation with alcohol and bicameral cardiostimulation) and surgical treatment. Cardiovascular rehabilitation	
18.	**Acute and chronic heart failure.** Causes of heart failure. The pathophysiology of heart failure. Precipitating factors of heart failure. CHF's clinical picture. Left and right HF. Global HF. Hypodiastolic heart failure. Classification of chronic heart failure. Complications of heart failure. Non-pharmacological and medical treatment of HF. Nondigitalic inotropic medication. Anticoagulant treatment. Antiplatelets. Antiarrhythmic medication. Interventional treatment (cardiac resynchronization therapy, implantable cardiac defibrillators), surgical (myocardial revascularization, valvular and ventricular reconstruction, cardiac transplantation). Acute heart failure. Left and right ventricular AHF. Definition. Classification (HF de novo and chronic worsened HF, Killip classes). Etiology, cardiac and extracardiac precipitating factors. Pathophysiology and presentation forms of Diagnosis: Clinical picture (symptoms and signs) and paraclinical investigations (ECG, imaging tests, laboratory, arterial blood pressure, etc.). Acute HF treatment. Targets of treatment (TA, hypervolemia, renal function, etc.). Ventilation techniques (oxygen therapy, non-invasive ventilation, orotracheal intubation and mechanical ventilation). Modulation of pre- / post-load. Inotropic therapies. Intraaortic balloon, ventricular assisting devices. Special AHF situations. Cardiogenic acute pulmonary edema. Cardiogenic shock. Special cases of acute heart failure.	4
19.	**Practical skills.**	**4**

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