

MEDICAL UNIVERSITY – PLOVDIV
FACULTY OF MEDICINE

Cardiology
program

Part of Internal diseases part I

Passed at Department Council №4 on 07.07.2020 г.
Approved at the Faculty Council, protocol №5 on 08.07.2020

Cardiology Curriculum

| Discipline | Exam in semester | Hours | | | | Hours by years and semesters | |
|---------------------|------------------|-------|----------|-------------------|--------|------------------------------|-------|
| | | | | | | IV year | |
| Clinical Cardiology | VI and VIII | All | Lectures | Practical lessons | Credit | VII | VIII |
| | | | | 105 | 30 | 75 | *12.1 |

*For the whole module „Internal diseases part I”

Name of the discipline

Cardiology

Type of discipline according to the unified state requirements:

Obligatory

Degree of education:

Master /M/

Forms of education:

Lectures, practical lessons, seminars, self-training

Year of study:

4th year

Duration:

One semester

Hours:

30 hours of lectures and 75 hours of practical lessons

Teaching aids:

Mulmedia presentations, presentation of patients with cardiovascular diseases; independent work with patients, reading of

electrocardiograms, participation in echocardiography studies, reading of 24-hour Holter ECGs, participation in veloergometry studies.

Forms of evaluation:

Current control, tests, colloquiums, writing essays.

Mark formation:

Average current mark for every semester

Aspects of mark formation:

Independent work with patient, participation in seminars, test, colloquiums

Semester exam:

Yes /practical exam, entry test, written exam/

State exam:

Yes /practical and written/

Main lecturers:

Habilitated lecturers form the section of Cardiology

Department:

First department of internal diseases

Section of Cardiology

➤ **ANNOTATION**

The scientific discipline Cardiology studies cardiovascular diseases – their etiopathogenesis, clinical presentation, diagnostics and treatment.

➤ **MAIN TASKS OF THE CURRICULUM**

- Acquisition of theoretical knowledge and practical skills about the structure and function of the heart, the pathological processes related to them, their diagnosis, differential diagnosis, treatment and prophylaxis.
- Building of clinical skills in the field of internal diseases and in particular - cardiac pathology.
- Mastering electrocardiography in norm and pathology

- Acquiring basic knowledge in the field of echocardiography in norm and pathology
- Acquisition of theoretical knowledge and practical skills for the clinical presentation, diagnosis, treatment and prevention of heart disease.

➤ **EXPECTED RESULTS**

Upon completion of the training, students are expected to have the following knowledge and skills:

- to know the epidemiology, etiology, pathogenesis and histomorphology of the most common heart diseases
- to know the clinical presentation and methods for diagnosis of the most common heart diseases
- to be able to differentiate between the most common heart diseases, as well as to make a differential diagnosis with diseases of other organs and systems with a similar clinical presentation
- to be able to record and read an electrocardiogram
- to be able to interpret the basic elements of echocardiography
- to know the basic medications used for treatment in cardiology
- to know and recommend measures for heart diseases prophylaxis

Teaching content of the discipline:

The priority goals of cardiology training include: The development of students' personal qualities, encouraging their initiative, creating habits of sustainable self-education and the ability to learn on their own, acquiring "transferable" knowledge, key competencies and skills. This is reflected in the curriculum of the course.

Lectures:

1. Chronic heart failure – classification, hemodynamics, treatment – 2h

2. Acute heart failure – 1h. Cardiogenic shock – 1h.
3. Rhythm and conduction disturbances – 2h.
4. Pulmonary thromboembolism – 1h. Chronic cor pulmonale – 1h.
5. Rheumatic heart disease – 1h. Infective endocarditis – 1h.
6. Mitral valve disease – 2h.
7. Aortic valve disease – 2h.
8. CAD – classification, etiology, risk factors – 1h. Antiischaemic drugs – 1h.
9. Stable angina – 1h. Unstable angina – 1h.
10. Acute myocardial infarction – etiology, pathogenesis, risk factors, clinical characteristics – 2h.
11. Acute myocardial infarction – complications, differential diagnosis, treatment – 2h.
12. Arterial hypertension – 2h.
13. Diseases of the myocardium - myocarditis - 1h. Cardiomyopathies - 1h.
14. Diseases of the pericardium - 1h. Congenital valvular disease – 1h.
15. Atherosclerosis – primary and secondary prevention – 2h.

Practical lessons:

1. Methods for cardiac investigation
2. Chronic Heart Failure – hemodynamics, classification, clinical characteristics
3. Chronic Heart Failure – treatment
4. Acute HF – cardiac asthma, acute pulmonary edema, cardiogenic shock
5. Arrhythmias – supraventricular
6. Arrhythmias – ventricular
7. Conduction disturbances
8. Treatment of arrhythmias
9. Colloquium – HF, arrhythmias
10. Chronic cor pulmonale
11. Rheumatic heart disease
12. Infective endocarditis

13. Mitral stenosis
14. Mitral regurgitation
15. Aortic stenosis
16. Aortic regurgitation
17. Colloquium – valvular heart diseases.
18. CAD – classification, etiology, risk factors
19. Antiischemic drugs
20. Stable angina
21. Unstable angina
22. Myocardial infarction – pathogenesis, clinical manifestation, diagnosis
23. Myocardial infarction – complications, differential diagnosis
24. Treatment
25. Colloquium – CAD
26. Arterial hypertension – etiology, pathogenesis, clinical manifestation
27. Arterial hypertension – treatment
28. Diseases of the myocardium. Myocarditis
29. Cardiomyopathies
30. Pericardial diseases

ABSTRACTS OF THE LECTURES AND PRACTICAL LESSONS IN CARDIOLOGY

Congestive heart failure. Presentation of the essence of the clinical syndrome of heart failure, classification of heart failure - left and right, congestive and low-output, hemodynamics of heart failure, treatment of the various types of heart failure.

Acute heart failure. Etiology and hemodynamic changes. The treatment of acute heart failure is discussed. **Cardiogenic shock** is presented in its multiorgan involvement, hemodynamics and treatment.

Rhythm and conduction disturbances. The essence of the action potential is presented. The various supraventricular and ventricular arrhythmias are discussed. In the context of the action potential, anti-rhythm drugs are discussed. The methods for diagnosis of rhythm and conduction disorders are presented. New methods of treatment are also given – ablation.

Pulmonary thromboembolism. The risk factors for PTE are presented. Virchow's triad. Clinical forms of PTE. Diagnosis of PTE – clinical presentation, paraclinical findings, laboratory tests. Treatment of PTE **Chronic pulmonary heart.** Definition. The three etiological forms are presented. Hemodynamics. Clinical presentation with right heart failure. Changes in blood gas analysis, chest X-ray. Treatment

Rheumatic fever. Etiology. Pathogenesis. Clinical presentation of first and consequent attacks. Differential diagnosis. Treatment. Infective endocarditis. Etiological factors. Portals of entry. Clinical presentation. Paraclinical presentation. Treatment

Acquired mitral valve diseases. Etiological factors. Hemodynamics. Clinical presentation. Diagnosis and differential diagnosis. Treatment - conservative and indications for surgical treatment

Acquired aortic valve diseases. Etiological factors. Hemodynamics. Clinical presentation. Diagnosis and differential diagnosis. Treatment - conservative and indications for surgical treatment.

Ischemic Heart Disease. Essence. Ten clinical forms. Classification, etiology, risk factors. Antianginal agents - the groups of drugs are presented and divided into those that alleviate the symptoms and those that change the prognosis.

Stable angina. The stable atherosclerotic plaque. Clinical characteristics. Diagnosis. Differential diagnosis. Treatment - conservative, invasive and operative.

Unstable angina. Characteristics of the unstable atherosclerotic plaque. Clinical classification according to Braunwald. Diagnosis and differential diagnosis. Treatment - conservative, interventional and operative.

Myocardial infarction. Etiology of acute coronary syndrome, pathogenesis of coronary artery occlusion, risk factors, clinical presentation.

Myocardial infarction. Complications - early and late, differential diagnosis of thoracic pain. Treatment of myocardial infarction - prehospital and hospital treatment.

Atherosclerosis. Successful and unsuccessful vascular aging. Lipid theory. Stages of atherosclerotic plaque formation. Types of dyslipidemia. Therapy of different types of dyslipidemias. Primary and secondary prevention.

Arterial hypertension. Essence. Pathogenetic mechanisms. Types of arterial hypertension - essential and secondary. Clinical presentation. Diagnosis. Differential diagnosis. Treatment - groups of antihypertensive drugs and modern aspects of treatment.

Myocardial diseases. Myocarditis. Etiology Classification. Clinical presentation. Diagnosis. Differential diagnosis. Treatment.

Myocardial diseases. Types of cardiomyopathies. Clinical presentation. Diagnosis. Differential diagnosis. Treatment.

Congenital heart defects. Classification. Cyanotic and acyanotic defects. Diagnosis and differential diagnosis. Treatment.

Pericarditis. Classification. Clinical presentation. Diagnosis. Differential diagnosis. Treatment.

SOURCES FOR PREPARATION:

1. Cardiology. Edited by M. Tokmakova. Lax book, 2013
2. The Oxford Handbook of Cardiology
3. Harrison's Principles of Internal Medicine, 20e.

TOPICS FOR THE SEMESTER EXAM IN CARDIOLOGY
(part of the semester exam in Internal diseases part I)

1. Cardiac glycosides.
2. Rhythmic and conduction disorders.
3. Antiarrhythmic drugs.
4. Congestive heart failure – hemodynamics, classification, treatment.
5. Acute heart failure.
6. Cardiogenic shock.
7. Rheumatic fever.
8. Cor pulmonale.
9. Infective endocarditis.
10. Mitral valvular heart disease.
11. Aortic valvular heart disease.
12. Diseases of the myocardium. Myocarditis.
13. Cardiomyopathies.
14. CAD – classification, diagnosis, etiology, risk factors.
15. Antianginal drugs.
16. Stable angina.
17. Unstable angina.
18. Acute myocardial infarction – etiology, pathogenesis, risk factors, clinical presentation.
19. Acute myocardial infarction – complications, differential diagnosis, treatment.
20. Arterial hypertension.
21. Congenital heart disease.
22. Pericarditis.

**TOPICS FOR THE STATE EXAM IN INTERNAL DISEASES,
THE FIRST DEPARTMENT OF INTERNAL DISEASES
(Cardiology part)**

1. Rhythm disturbances.
2. Conduction disturbances.
3. Congestive heart failure. Hemodynamic classification, treatment.
4. Acute heart failure. Cardiac asthma. Pulmonary edema. Cardiogenic shock.
5. Chronic cor pulmonale (Chronic pulmonary heart disease).
6. Infective endocarditis.
7. Acquired mitral valve diseases.
8. Acquired aortic valve diseases.
9. Diseases of the myocardium. Myocarditis. Cardiomyopathies.
10. Ischemic heart disease. Classification, etiology, risk factors, pathogenesis.
11. Stable and unstable angina.
12. Myocardial infarction.
13. Arterial hypertension.
14. Pericarditis.