


**MINISTRY OF HEALTH OF THE REPUBLIC OF BELARUS
EDUCATIONAL INSTITUTION
BELARUSIAN STATE MEDICAL UNIVERSITY**

**Контрольный
экземпляр**

APPROVED
by First Vice-Rector, Professor
I.N. Moroz
28.02.2019
Reg. # UD-*1.79-82/1920*edu.



CLINICAL RHEUMATOLOGY

**Curriculum of higher educational institution
in the educational discipline for the specialty:**

1-79 01 01 “General medicine”

Curriculum is based on the educational program of higher education for the specialty 1-79 01 01 «General medicine», approved 30.08.2013 by the Decree of the Ministry of Education of the Republic of Belarus, registration # 88, with amendments approved 28.10.2017 by the Decree of the Ministry of Education of the Republic of Belarus, registration # 150

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RECOMMENDED FOR APPROVAL:

by the 2nd Department of Internal Diseases of Educational Institution «Belarusian State Medical University»
(protocol # 9 of 22.01.2019);

by the Methodological Commission of Therapeutic Disciplines of the Educational Institution «Belarusian State Medical University»
(protocol # 2 of 12.12.2019)

EXPLANATORY NOTE

«Clinical rheumatology» is an educational discipline comprising systematized scientific knowledge and methods for diagnosis, differential diagnosis and treatment of rheumatic diseases.

The purpose of teaching and learning the discipline of «Clinical rheumatology» consists of clinical thinking formation as well as acquisition of scientific knowledge on etiology, pathogenesis, early diagnosis, differential diagnosis and principles of treatment by students.

The tasks of studying the discipline are to develop the students' academic competences, based on the ability to self-search educational and information resources, as well as acquire and understand the knowledge of:

- basic concepts in rheumatology and the nomenclature of rheumatic diseases;
- causes and mechanisms of development of typical autoimmune diseases;
- major manifestations of typical joint diseases, connective tissue diseases and systemic vasculitis;
- risk factors contributing to the onset and exacerbation of rheumatic diseases;
- principles of treatment and prevention of exacerbations of joint diseases, connective tissue diseases and systemic vasculitis.

The tasks of teaching the discipline include the formation of students' social, personal and professional competences, based on the knowledge and application of:

- methods of objective examination of rheumatological patient in diagnostic process of joint and body organs pathology;
- skills for registering arthrograms, making clinical diagnoses and planning examination and treatment of rheumatic diseases;
- organization skills for diagnostic, differential diagnostic and therapeutic processes of the main rheumatic diseases;
- ability for correct interpretation of data obtained during clinical, laboratory and instrumental examination as well as ordering treatment for rheumatic patients and monitoring its effectiveness and safety.

Teaching and successful learning of the discipline «Clinical rheumatology» is carried out on the basis of the knowledge and skills previously acquired by the students in the following disciplines:

Pharmacology. The classification of drugs. Pharmacodynamics and pharmacokinetics. Mechanisms of drugs action, side effects. Rules of writing prescriptions.

Internal medicine propaedeutics. Anamnesis and technique of examination of the patient. Clinical methods for examining a patient with diseases of body organs. Laboratory and instrumental studies (thermometry, spirometry, blood pressure (BP) measurement, venous pressure, blood flow velocity, gastric and duodenal tube placement, analysis of sputum, blood, urine, feces, examination of gastric juice, taking ECG). Theoretical ideas about the main laboratory and instrumental methods of investigation conducted by specialists (endoscopy, radioisotope investigation,

ECG, echocardiography, biopsy data, sternal puncture, investigation of lung volumes). Main clinical symptoms characteristic of diseases of the respiratory system, cardiovascular system, digestion, liver, kidney, blood system, musculoskeletal system and the ability to group them into typical syndromes. Methods of patient care and the ability to perform basic nursing procedures.

Topographic anatomy and operative surgery. Layer-by-layer structure of the anatomical regions. The relative position (syntopia) of the organs, their projection onto the skin (holotopia), relation to the skeleton (skeletonotopia). Blood supply, innervation and lymphatic drainage in normal and pathological conditions.

Internal diseases (4th and 5th years). Causes and mechanisms of development of typical diseases of body organs. The most important manifestations of diseases of the respiratory system, cardiovascular system, gastrointestinal tract, urinary tract, musculoskeletal system, blood system. Risk factors for the development and exacerbation of diseases of body organs. Complex treatment, prevention of major diseases of internal organs, rehabilitation of patients with diseases of internal organs.

Clinical Pharmacology. Clinical and pharmacological characteristics (pharmacokinetics, pharmacodynamics, indications and dosage regimen, contraindications, side effects and drug interactions) of the main drugs. The strategy of choosing the most effective and safe drugs for the treatment of diseases, taking into account the pharmacological properties of drugs, the nature of the pathological process, the functional state of the body, pharmacological and allergological history, economic aspects of pharmacotherapy. Dangerous drug combinations. The basics of pharmacotherapy of inflammation and allergies. Principles of pharmacological correction of metabolic disorders. Chemotherapy standards for bacterial, viral, fungal, protozoal, parasitic diseases.

Outpatient therapy. Organization of outpatient medical care for the population. Diagnostic and medical care in outpatient settings. Preventive and rehabilitation measures. Expertise of temporary disability, medical and social expertise. Prophylactic medical examination service of the population.

Goals, objectives, structure and organization of outpatient and specialized medical care in inpatient settings in the Republic of Belarus. Standards for the examination of patients at the all levels of medical care. Indications and contraindications for health resort treatment. Methods of outpatient rehabilitation treatment in the conditions of a day hospital or a home hospital. Groups of regular medical check-ups of the population, the legal framework of medical and social expertise.

Phthisiopulmonology. Examination of a patient with suspected respiratory tuberculosis. Classification, diagnosis, differential diagnosis, clinical presentation and treatment of pulmonary and extrapulmonary forms of tuberculosis. Complications of tuberculosis. Classification, clinical presentation, diagnosis, differential diagnosis, treatment and complications of respiratory sarcoidosis.

Academic Competency Requirements

A specialist must:

- AC-1. Be able to apply basic scientific and theoretical knowledge to solve theoretical and practical problems.
- AC-2. Muster systemic and comparative analysis.

- AC-3. Muster research skills.
- AC-4. Be able to work independently.
- AC-5. Be able to generate new ideas (to have creativity).
- AC-6. Have an interdisciplinary approach to problem solving.
- AC-7. Have skills related to the use of technical devices, information management and working with a computer.
- AC-8. Have oral and written communication skills, professional and scientific vocabulary.
- AC-9. To be able to learn, improve the skills throughout the life.

Requirements for the social and personal competencies of a specialist

A specialist must:

- SPC-1. Possess civicism.
- SPC-2. Be capable of social interaction.
- SPC-3. Have the ability to interpersonal communication.
- SPC-4. Have skills of health protection.
- SPC-5. Be capable of criticism and self-criticism.
- SPC-6. Be able to work in a team.

Requirements for professional competencies of a specialist

A specialist must be able to:

Preventive support:

- PS-1. Apply knowledge about the structure and function of the body in norm and pathology, characteristics of the population level of life organization.
- PS-2. Use the knowledge of the basic physical, chemical, biological and physiological laws of the human body in normal and pathological conditions.
- PS-3. Use the knowledge of general professional and special disciplines to maintain his (her) own health and promote a healthy lifestyle.
- PS-6. Carry out preventive measures among the population, including using modern information technologies.

Medical care:

- MC-7. Provide medical care for the most common diseases, injuries, disorders, including urgent and life-threatening conditions of the patient.
- MC-8. Use diagnostic and treatment equipment.
- MC-9. Apply modern methods of diagnosis and treatment of diseases at various stages of medical care.
- MC-10. Apply techniques and methods of recovery treatment.
- MC-11. To be able to independently acquire and use in practice new knowledge and skills, including in new fields of knowledge.

Expert and consulting practice:

- PC-12. Conduct assessment of human health.
- PC-13. Use the basic laws of natural sciences in professional activities, apply the knowledge and skills gained in general professional disciplines to maintain, restore and strengthen public health.

– PC-14. Apply skills of professional behavior (deontology), know and comply with medical ethics.

Research activity:

– PC-15. Master basic methods, methods and means of obtaining, storing, processing information, have computer skills as a means of obtaining and managing information.

– PC-16. Work with scientific literature and create a personal scientific and practical information database.

– PC-19. Organize the work on a scientific basis using computer information processing technologies.

Pedagogical practice:

– PC-22. Plan and implement measures aimed at improving the skills of a doctor.

– PC-23. Summarize and promote the dissemination of modern medical knowledge.

Organizational and managerial activities:

– PC-25. Plan and organize treatment and diagnostic measures for diseases and injuries, including cases of mass admission of patients.

– PC-26. Document the results of preventive, curative and rehabilitative medical care.

– PC-27. Interact with specialists of related specialties.

– PC-28. Analyze and evaluate collected data.

– PC-29. Manage medical care processes.

– PC-31. To prepare reports, materials for presentations and present them.

– PC-32. Use global information resources.

– PC-33. Master modern telecommunication facilities.

As a result of studying the discipline «Clinical Rheumatology» a student must know:

– causes and mechanisms of development of basic rheumatologic syndromes and nosological forms, the nature of the immunopathology of certain diseases;

– clinical manifestations of rheumatic diseases, classification criteria for diagnosis of the diseases;

– informativeness of laboratory and instrumental methods of examination in rheumatology, plans of examination in main nosological forms;

– indications, treatment regimes, side effects of main groups of antirheumatic drugs, main courses of non-pharmacological treatment of rheumatic diseases;

be able to:

– carry out an objective examination of the patient to identify the main rheumatic syndromes and their characteristics;

– evaluate the data of laboratory and instrumental examinations and use this information for verification of diagnosis and differential diagnosis;

– justify a clinical diagnosis of the most common rheumatic diseases and formulate it in accordance with the modern classifications;

– determine the strategy and tactics of treatment, program of monitoring of effectiveness and safety of treatment;

master:

- methods of auscultation in heart valvular diseases;
- skills for assessment of pain syndrome in joint diseases.

The structure of the curriculum in the discipline «Clinical rheumatology» includes 4 sections.

Total number of hours for the study of the discipline is 54 academic hours. Distribution of the class hours by the type of training: 28 hours of practical training and 26 hours of the self-study.

Current assessment is carried out according to the syllabus of the specialty in the form of a credit (12semester).

Form of higher education – full-time.

THEMATIC PLAN

Section (topic) name	Number of class hours
	practical
1. Nomenclature and diagnosis of rheumatic diseases. Treatment of rheumatic diseases	7
1.1. Nomenclature of rheumatic diseases. Clinical diagnosis of musculoskeletal system disorders	2
1.2. Laboratory and instrumental diagnosis of rheumatic diseases	2
1.3. Anti-inflammatory therapy of rheumatic diseases (NSAIDs, glucocorticosteroids)	1
1.4. Disease-modifying antirheumatic drugs. Non-pharmacological treatment of rheumatic diseases. Genetically engineered biological drugs	2
2. Clinical arthrology	7
2.1. Osteoarthritis	2
2.2. Microcrystalline and infectious arthritis	2
2.3. Spondyloarthritis	2
2.4. Pathology of periarticular tissues. Arthropathy in non-rheumatic diseases	1
3. Connective tissue diseases. Osteoporosis	7
3.1. Rheumatoid arthritis	2
3.2. Systemic lupus erythematosus. Antiphospholipid syndrome	2
3.3. Systemic sclerosis. Idiopathic inflammatory myopathy	1
3.4. Diagnosis and treatment of primary and secondary osteoporosis	2
4. Primary systemic vasculitis	7
4.1. Primary systemic vasculitis. ANCA-associated vasculitis	4
4.2. Systemic vasculitis of large and small vessels	3
Total	28

CONTENT OF THE EDUCATIONAL MATERIAL

1. NOMENCLATURE AND DIAGNOSIS OF RHEUMATIC DISEASES. TREATMENT OF RHEUMATIC DISEASES

1.1. Nomenclature of rheumatic diseases. Clinical diagnosis of musculoskeletal system disorders

Main groups of diseases and their characteristics.

Significance of anamnesis and patient's complaints in determining the nature of joints damage. Assessment of pain intensity and stiffness (VAS and other analog scales). Methods of physical examination of joints and spine. Articular indexes. Methods of evaluation of the musculoskeletal system function. Basic parameters of arthrogram. Significance of skin, mucosas, hypoderm and nails changes. Eye lesion in rheumatic diseases. Main clinical syndromes in patients with rheumatological disorders.

1.2. Laboratory and instrumental diagnosis of rheumatic diseases

Tests determining the nature and activity of the inflammatory process. Immunological diagnosis of rheumatic diseases: rheumatoid factor (RF), antinuclear antibodies (ANA) and their types, antiphospholipid antibodies, anticytoplasmic antibodies (ANCA), antibodies to cyclic citrullinated peptides (anti-CCP). Interpretation of the results of immunological tests. Synovial fluid examination: evaluation of the general and immunological tests, crystals content investigation.

X-ray examination of joints. X-ray computed tomography. Magnetic resonance imaging. Ultrasound examination of the joints. Scintigraphy of bones and joints. Arthroscopy and synovial biopsy. Diagnostic potential of methods, interpretation of results, algorithm of use in diagnostic process.

1.3. Anti-inflammatory therapy of rheumatic diseases (nonsteroidal anti-inflammatory drugs (NSAIDs), glucocorticosteroids)

NSAIDs: Clinical classification of the drugs, regimes and tactics of administration, individual selection of therapy, main side effects and their prevention. Glucocorticosteroids. Main treatment variants (systemic, oral, local, pulse glucocorticoid therapy): indications and contraindications, monitoring of treatment, side effects, their prevention and treatment.

1.4. Disease-modifying antirheumatic drugs (DMARDs). Non-pharmacological treatment of rheumatic diseases. Genetically engineered biological drugs

Main synthetic drugs for basic therapy: recommendations for use, contraindications, monitoring of treatment. Biological drugs for basic treatment: indications and contraindications for treatment, the most frequent side effects. Disease-modifying antirheumatic drugs combination therapy.

Significance of patient education, diet, physical activity, physiotherapy and sanatorium-resort therapy. Indications and basic surgical treatment of rheumatic diseases.

Main biological targets for biological drugs. The concept of targeted therapy with biological drugs. Clinical efficacy of biological therapy. Contraindications. Side effects. The concept of biosimilars. Main biosimilars.

2. CLINICAL ARTHROLOGY

2.1. Osteoarthritis

Risk factors. Primary and secondary osteoarthritis. Clinical and radiographic diagnosis. Classification criteria for osteoarthritis. Main routes of treatment.

2.2. Microcrystalline and infectious arthritis

Microcrystalline arthritis: main nosological forms, characteristics of articular syndrome. Gout. Causes of secondary gout. Acute gouty arthritis: diagnosis and treatment. Characteristics of articular syndrome and internal organs lesion in chronic gout. Gout classification criteria. Main routes in chronic gout treatment. Main types of infectious arthritis (bacterial, gonococcal, tuberculous, viral, Lyme borreliosis): clinical signs, etiological diagnosis and treatment.

2.3. Spondyloarthritis (SPA)

Classification, SPA classification criteria, algorithm of early diagnosis. Characteristics of joint and spine lesions in ankylosing spondylitis, psoriatic arthropathy, reactive arthritis, the most frequent extra-articular manifestations. Lower back pain syndrome. Differential diagnosis in spine lesions, significance of different imaging techniques. Basic principles of sanatorium treatment.

2.4. Pathology of periarticular tissues. Arthropathy in non-rheumatic diseases

Pathology of periarticular tissues: main variants, the most frequent localization, clinical and instrumental diagnosis, treatment approaches. Fibromyalgia syndrome: diagnosis and treatment.

Arthropathy in non-rheumatic diseases (endocrine and neurological diseases, blood disorders). Rheumatological paraneoplastic syndromes.

3. CONNECTIVE TISSUE DISEASES. OSTEOPOROSIS

3.1. Rheumatoid arthritis

Articular syndrome characteristics, extra-articular manifestations, special clinical forms (Felty's syndrome, adult Still's disease). Variants of the disease debut. Clinical significance of laboratory tests and instrumental methods of investigation. Immunological diagnosis of rheumatoid arthritis (RA). Diagnostic criteria for RA. Differential diagnosis of polyarticular damage. General principles of treatment of patients with RA. Criteria of remission in RA. DMARDs therapy. Characteristics of glucocorticoid therapy in RA. The concept of early RA.

3.2. Systemic lupus erythematosus (SLE). Antiphospholipid syndrome (APS)

Clinical manifestations and variants of the disease. Laboratory diagnosis. Significance of immunological methods. Diagnostic criteria for SLE. Drug-induced lupus erythematosus. Cutaneous lupus erythematosus. Differentiated therapy according to prevailing clinical manifestations and laboratory abnormalities.

Antiphospholipid syndrome: primary and secondary. Clinical manifestations depending on localization and pattern of thrombosis. Clinical disorders associated with antiphospholipid antibodies. Laboratory diagnosis of APS: types of antibodies. Main treatment directions.

3.3. Systemic sclerosis. Idiopathic inflammatory myopathy

Classification. Main clinical manifestations. Laboratory and instrumental diagnosis. Differential diagnosis of Raynaud's syndrome. Treatment of patients with systemic sclerosis.

Idiopathic inflammatory myopathy: classification. Clinical picture of dermatomyositis and polymyositis. Laboratory and instrumental diagnosis, the role of musculocutaneous flapbiopsy. Differential diagnosis in myopathy. Treatment of dermatomyositis and polymyositis. Diffuse eosinophilic fasciitis, relapsing polychondritis, diagnosis, differential diagnosis.

3.4. Diagnosis and treatment of primary and secondary osteoporosis

Risk factors. Classification. Clinical manifestations. Significance of densitometry in diagnosis of osteoporosis. Potentials of other methods of instrumental and laboratory diagnosis. Treatment of osteoporosis. Main ways of primary and secondary prophylaxis. Differential diagnosis with bone diseases (Paget's disease, osteomalacia, ischemic bone necrosis, bone tumors).

4. PRIMARY SYSTEMIC VASCULITIS

4.1. Primary systemic vasculitis. ANCA-associated vasculitis

Primary systemic vasculitis: classification.

ANCA-associated vasculitis (granulomatosis with polyangiitis, microscopic polyangiitis, eosinophilic granulomatosis with polyangiitis): characteristics of clinical manifestations, laboratory and instrumental diagnosis. Role of immunological diagnostic methods. Treatment.

4.2. Systemic vasculitis of large and small vessels

Systemic vasculitides affecting large blood vessels. Giant cell arteritis and polymyalgia rheumatica: criteria for the diagnosis, treatment approaches. Non-specific aortoarteritis: clinical features, instrumental diagnosis, treatment.

Systemic vasculitis affecting small blood vessels (hemorrhagic vasculitis, essential cryoglobulinemic vasculitis): diagnosis and treatment. Differential diagnosis with skin vasculopathy.

EDUCATIONAL AND METHODOLOGICAL CHART OF THE DISCIPLINE «CLINICAL RHEUMATOLOGY»

Section/topic number	Section/topic number	Classes hours		Self-studies	Equipment	Form of control
		practical				
1.	Nomenclature and diagnosis of rheumatic diseases. Treatment of rheumatic diseases	7		6		interview
1.1.	Nomenclature of rheumatic diseases. Clinical diagnosis of musculoskeletal system disorders	2		2	2, 4	interview
1.2.	Laboratory and instrumental diagnosis of rheumatic diseases	2		2	1, 3, 6	interview
1.3.	Anti-inflammatory therapy of rheumatic diseases (NSAIDs, glucocorticosteroids)	1		1	1, 3, 6	interview
1.4.	Disease-modifying antirheumatic drugs. Non-pharmacological treatment of rheumatic diseases. Genetically engineered biological drugs	2		1	1, 3, 6	interview
2.	Clinical arthrology	7		7		interview
2.1.	Osteoarthritis	2		2	1, 2, 3, 4, 5, 6	interview
2.2.	Microcrystalline and infectious arthritis	2		1	1, 2, 3, 4, 5, 6	interview
2.3.	Spondyloarthritis	2		2	1, 2, 3, 4, 5, 6	interview
2.4.	Pathology of periarthritic tissues. Arthropathy in non-rheumatic diseases	1		2	1, 2, 3, 4, 5, 6	interview
3.	Connective tissue diseases. Osteoporosis	7		7		interview
3.1.	Rheumatoid arthritis	2		2	1, 2, 3, 5, 6	interview
3.2.	Systemic lupus erythematosus. Antiphospholipid syndrome	2		2	1, 2, 3, 5, 6	interview
3.3.	Systemic sclerosis. Idiopathic inflammatory myopathy	1		2	1, 2, 3, 5, 6	interview
3.4.	Diagnosis and treatment of primary and secondary osteoporosis	2		1	1, 2, 3, 5, 6	interview

4. Primary systemic vasculitis	7	6		interview
4.1. Primary systemic vasculitis. ANCA-associated vasculitis	4	3	1, 2, 3, 5, 6	interview
4.2. Systemic vasculitis of large and small vessels	3	3	1, 2, 3, 5, 6	interview, credit
Total	28	26		

INFORMATION AND INSTRUCTIONAL UNIT**LITERATURE****Basic:**

1. Innes, J. A. Davidson's Essentials of Medicine / J. A. Innes ; ed. J. A. Innes, S. Maxwell. 2nd ed. Edinburgh : Elsevier, 2016. – 860 p.

Additional:

2. Ashar, Bimal H. The Johns Hopkins Internal Medicine Board Review : certification and recertification / Ashar, Bimal H., Miller, Redonda G., Sisson, Stephen D. - 4th ed. - Philadelphia : Elsevier, 2012. - 654 p.
3. Family medicine : in 3 books. Book 1. General Issues of Family Medicine / O. M. Hyrina [et al.] ; ed. O. M. Hyrina, L. M. Pasiyeshvili. Kyiv : AUS Medicine Publishing, 2016. – 560 p.

LIST OF AVAILABLE DIAGNOSTIC TOOLS

The following forms are used for competences assessment:

1. Oral form:
 - interviews;
 - oral credit.

LIST OF VISUAL AIDS

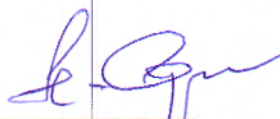
1. Computer presentations of lectures and practical classes.
2. Atlases of basic symptoms and syndromes of rheumatic diseases.
3. Electronic and handwritten case histories of rheumatological patients.
4. Sets of arthrograms showing main types of joints pathology.
5. Sets of case studies including visualization of clinical symptoms and instrumental investigation data.
6. Materials from rheumatological websites on electronic carriers (CD or DVD).

LIST OF PRACTICAL SKILLS

1. Plan of examination of a patient with joint disease.
2. Pain measurement according to VAS.
3. Marking an arthrogram.
4. Interpretation of osteodensitometry.
5. Calculating the disease activity in rheumatoid arthritis according to DAS28 Score.

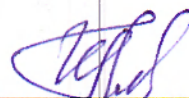
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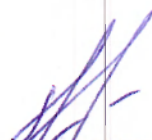
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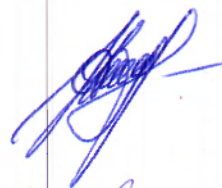

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Curriculum content, composition and accompanying documents comply with established requirements.

Dean of the Medical Faculty of International Students of the Educational Institution «Belarusian State Medical University»

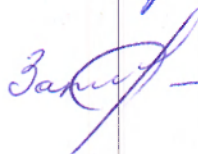
27.02. 2019



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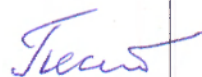
27.02. 2019



S.V. Zaturanova

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