



CD 8.5.1 CURRICULUM DISCIPLINĂ

Redacția: 06

Data: 28.02.2018

Pag. 1/9

FACULTY OF MEDICINE №2
INFECTIOUS DISEASES STUDY PROGRAM
DEPARTMENT OF INFECTIOUS DISEASES

APPROVED

at the meeting of the Commission for Quality Assurance and Curriculum Evaluation of the Faculty of Medicine

Report Nr. 8 of 15.03.2018

Chairman of the Commission, PhD, associate professor

Suman Serghei

APPROVED

at the meeting of the Faculty of Medicine №2 Council

Report Nr. 6 of 20.03.2018

Dean of the Faculty, PhD, associate professor

Bețiu Mircea

APPROVED

at the meeting of Infectious Diseases Department

Report nr. 3 of 30.11.2017

Head of the Department „Infectious Diseases”

PhD, university professor

T. Holban

CURRICULUM

SUBJECT MEDICAL PARASITOLOGY AND TROPICAL DISEASES

Integrated studies

The type of the subject: **Compulsory**

Chișinău, 2018



CD 8.5.1 CURRICULUM DISCIPLINĂ

Redacția: 06

Data: 28.02.2018

Pag. 2/9

I. INTRODUCTION

General presentation of the subject: place and role of the discipline in the formation of the specific competences of the professional / specialty training program

- The discipline of Medical Parasitology and Tropical Diseases refers to parasitic diseases caused by helminths, protozoa and other parasites, as well as diseases of other etiologies spread in tropical and subtropical areas.
- Tropical diseases continue to affect important groups of people, not only in tropical areas, but also in moderate climate zone. The difficulties of diagnosis and treatment of these diseases are largely related to the underestimation of their importance by both: health care providers and some physicians. At the same time, parasitology includes a number of parasitic diseases with multiple implications in the other medical specialties - internal medicine, gastroenterology, pediatrics, surgery, pharmacology, gynecology, neurology.
- The morphological and biological features of parasites within this curriculum will be studied to the extent they can help to understand the pathogenic role of parasites, providing the theoretical and practical basis for a qualified diagnosis and treatment.
- Infectious tropical diseases occur in tropical and subtropical regions and are difficult to prevent and control. Tropical and parasitic diseases are a growing problem, mainly due to the intense population flow. A quarter of people traveling to exotic countries do not take into account the risk of contracting a tropical disease and do not get vaccinated before traveling.
- At the same time, as a result of climate change, there is a shift of tropical diseases to areas that are not typical for them. These diseases require increased attention, extensive knowledge, and advanced diagnostic methods in setting up an effective clinical management.

The mission of the Curriculum (the purpose) in the professional development:

To train doctors who will possess modern methods of diagnosis, treatment and control of parasitic and tropical diseases.

- Language of instruction: Romanian, Russian, English, French;
- Learners: students of the 5th year of study, faculties of Medicine 1 and Medicine 2.

II. COURSE MANAGEMENT

| | | | |
|---------------------------------------|-----------|---|-----------|
| The code of the discipline | | S.11.O.098 | |
| The name of the discipline | | Medical Parasitology and Tropical Diseases | |
| Curator (s) of the course | | PhD, university professor T.Holban | |
| Year of study | V | Semester (s) | IX |
| The total number of hours, including: | | | 90 |
| Lectures | 20 | Practical work | 25 |
| Seminars | 25 | Individual work | 20 |
| Form of assessment | CD | The number of credits | 3 |

III. LEARNING OBJECTIVES

**At the end of the course, the student will be able to:
at the level of knowledge and understanding:**

- The content of the course/lectures
- The content of the practical lessons



CD 8.5.1 CURRICULUM DISCIPLINĂ

Redacția: 06

Data: 28.02.2018

Pag. 3/9

at the level of application:

- to diagnose the most common parasitic and tropical diseases;
- to estimate the results of the paraclinical investigations;
- to apply etiotropic treatment according to etiology of parasitic and tropical diseases;
- to solve situational problems, processing multilaterally and critically the information received;
- to be able to prove personal opinion and accept the diversities of the clinical manifestations of parasitic and tropical diseases.

at the level of integration

- to be able to estimate the importance of studying Parasitic and Tropical diseases in the context of Internal Medicine
- to creatively approach the problems of clinical medicine
- to deduce interrelations between Parasitic and Tropical diseases and other clinical disciplines
- to have skills to implement and integrate the knowledge gained in his / her medical practice
- to be able to evaluate and self-assess the knowledge in the field
- to be able to assimilate new achievements in Parasitic and Tropical diseases

IV. PRIOR CONDITIONS AND REQUIREMENTS

| | |
|-------------|---|
| Obligatory | Gown, protective mask / respirator, cap, phonendoscope, surgical gloves |
| Recommended | Use of the individual desinfectant solutions |

V. TOPICS AND PRELIMINARY DISTRIBUTION OF HOURS

A. Lectures

| Nr. | Topic | Hours |
|-------|--|-------|
| 1. | Introduction to the pathology of infectious diseases | 2 |
| 2. | Medical parasitology | 2 |
| 3. | Helminthiasis: nematodes. | 2 |
| 4. | Helminthiasis: cestodosis, trematodosis. | 2 |
| 5. | Malaria. | 2 |
| 6. | Toxoplasmosis (congenital, acquired, in immunocompromised individuals). | 2 |
| 7. | Cholera. | 2 |
| 8. | Rickettsiosis. | 2 |
| 9. | Haemorrhagic fever. | 2 |
| 10. | Parasitic and fungal infections in immunocompromised individuals. | 2 |
| Total | | 20 |

B. Practical work / seminars and individual work

| Nr. d/o | TOPIC | hours | |
|---------|--|-------|-----------------|
| | | PW/S | Individual work |
| 1. | Introduction to medical parasitology. Arachnoentomology | 5 | 2 |
| 2. | Toxoplasmosis (congenital, acquired, in immunocompromised individuals). | 5 | |



CD 8.5.1 CURRICULUM DISCIPLINĂ

Redacția:

06

Data:

28.02.2018

Pag. 4/9

| Nr. d/o | TOPIC | hours | |
|--------------|--|-----------|-----------------|
| | | PW/S | Individual work |
| 3. | Intestinal nematodes: Ascaris lumbricoides, Enterobius vermicularis, Ancylostoma duodenale, Strongyloides stercoralis, Trihuris trichiura. Blood and tissue nematodes: Trihinella spiralis, Toxocara canis, cati. | 5 | 2 |
| 4. | Cestodes: Diphylobothrium latum, Taenia solium, Cysticercus, Taenia saginata, Hymenolepis nana. | 5 | 2 |
| 5. | Trematodoses: Opistorhis felineus, Urogenital schistosomiasis. | 5 | 2 |
| 6. | Malaria (vivax, ovalae, malaria, falciparum). | 5 | 2 |
| 7. | Visceral leishmaniasis. Amebiasis. | 5 | 2 |
| 8. | Cholera. Giardiasis. | 5 | 2 |
| 9. | Rickettsioses (epidemic typhus, Brill disease, Rocky Spotted Mountain fever, Butoneuse fever, Q fever). | 5 | 2 |
| 10. | Hemorrhagic Fever (Yellow Fever, Ebola, Marburg, Lassa, Congo-Crimea, Denge hemorrhagic fever, hemorrhagic fever with renal, yellow fever). | 5 | 2 |
| Total | | 50 | 20 |

VI. REFERENCE OBJECTIVES AND CONTENT UNITS

| Objectives | Content units |
|---|--|
| <p>Topic 1. Introduction to infectious pathologies</p> <p><i>To define the notions of infection, infectious disease, infectious disease, symbiosis, commensualism and parasitism.</i></p> <p><i>To acquire the classification of pathogenic for humans parasitic agents .</i></p> <p><i>To understand the pathogeny of aggressive agents of parasitic organisms in humans.</i></p> <p><i>To define anti-parasitic defense mechanisms.</i></p> <p><i>To know the general features of pathogenic parasitic agents</i></p> <p><i>To enumerate the general clinical manifestations of parasitic invasions.</i></p> <p><i>To acquire the characteristics of the clinical periods characteristic to acute infectious disease.</i></p> <p><i>To know the principles of treatments in the case of parasitic invasions.</i></p> | <p>The spread and importance of infectious diseases.</p> <p>Principles of classification.</p> <p>Etiology.</p> <p>The factors of aggression of microorganisms.</p> <p>Macroorganism defense mechanisms.</p> <p>Investigation methods.</p> <p>Principles of treatment.</p> |
| <p>Topic 2. Medical Parasitology</p> <p><i>To define the types of parasitism.</i></p> <p><i>To explain the types of parasite-host relations.</i></p> <p><i>To bring etiopathogenic explanations of the macroorganism defenses mechanism against parasitic aggression</i></p> <p><i>To know the elementary concerns of a parasitic cycle.</i></p> <p><i>To know the classification of parasites of medical importance.</i></p> | <p>Preface.</p> <p>Types of parasitism.</p> <p>Parasite-host relationships.</p> <p>Host reactions to parasitic aggression.</p> <p>The parasitic cycle.</p> |



CD 8.5.1 CURRICULUM DISCIPLINĂ

Redacția: 06

Data: 28.02.2018

Pag. 5/9

| Objectives | Content units |
|--|--|
| | Classification of parasites of medical importance: protozoa, helminthes, arthropod. |
| Topic 3. Helminthiasis: nematodes. | |
| <i>To know the habitat of nematodes in the world and their actuality for the Republic of Moldova.</i> <i>To explain the vital cycle.</i> <i>To describe the clinical manifestations, explaining them pathogenically.</i> <i>To know the paraclinical methods in use.</i> <i>To apply treatment and prophylaxis schemes.</i> | Habitat. Actuality. Vital cycle of the parasites. Pathogenesis stages Clinical picture Laboratory diagnosis Principles of treatment and prophylaxis |
| Topic 4. Helminthiasis: cestodes, trematodes. | |
| <i>To know the habitat of cestodes and trematodes in the world and their actuality for the Republic of Moldova.</i> <i>To explain the vital cycle.</i> <i>To describe the clinical manifestations, explaining them pathogenically.</i> <i>To know the paraclinical methods in use.</i> <i>To apply treatment and prophylaxis schemes.</i> | Habitat. Actuality. Vital cycle of the parasites. Pathogenesis stages Clinical picture Laboratory diagnosis Principles of treatment and prophylaxis |
| Topic 5. Malaria. | |
| <i>To know the habitat of different types of plasmodium in the world and their actuality for the Republic of Moldova.</i> <i>To explain the vital cycle.</i> <i>To describe the clinical manifestations, explaining them pathogenetically.</i> <i>To know the paraclinical methods in use.</i> <i>To apply treatment and prophylaxis schemes.</i> | Habitat. Actuality. Vital cycle of the parasites. Pathogenesis stages Clinical picture Laboratory diagnosis Principles of treatment and prophylaxis |
| Topic 6. Toxoplasmosis (congenital, acquired, in immunocompromised individuals). | |
| <i>To reason the actuality of toxoplasmosis as a local and global problem.</i> <i>To explain the vital cycle of toxoplasma.</i> <i>To describe the clinical manifestations, explaining them pathogenically.</i> <i>To know the paraclinical methods in use.</i> <i>To apply treatment and prophylaxis schemes.</i> | Habitat. Actuality. Vital cycle of the parasites. Pathogenesis stages Clinical picture Laboratory diagnosis Principles of treatment and prophylaxis |
| Topic 7. Cholera | |
| <i>To know the rate of spread and mortality caused by Vibrio Cholera in the world and the possible conditions for the occurrence of cholera in the Republic of Moldova.</i> <i>To explain the mechanism of secretory dehydration caused by Vibrio Cholera.</i> <i>To describe the clinical manifestations, explaining them pathogenically.</i> <i>To know the paraclinical methods in use.</i> <i>To be able to properly apply the schemes of etiotropic, pathogenetic and symptomatic</i> | Habitat. Actuality. Vital cycle of the parasites. Pathogenesis stages Clinical picture Laboratory diagnosis Principles of treatment and prophylaxis |
| Topic 8. Rickettsiosis | |



CD 8.5.1 CURRICULUM DISCIPLINĂ

Redacția: 06

Data: 28.02.2018

Pag. 6/9

| Objectives | Content units |
|---|--|
| <i>To know where and which species of Rickettsia are spread. To describe the clinical manifestations, explaining them pathogenically. To know the paraclinical methods in use. To apply treatment and prophylaxis schemes.</i> | Habitat. Actuality. Pathogenesis stages Clinical picture Laboratory diagnosis Principles of treatment and prophylaxis |
| Topic 9. Hemorrhagic fever. <i>To know the types of Hemorrhagic fever and its habitat. To describe the clinical manifestations, explaining them pathogenically. To know the paraclinical methods in use. To be able to properly apply pathogenic and symptomatic treatment.</i> | Habitat. Actuality. Pathogenesis stages Clinical picture Laboratory diagnosis Principles of treatment and prophylaxis |
| Topic 10. Parasitic and fungal infections in immunocompromised individuals. <i>To raise awareness of the human immunodeficiency problem through parasitic and fungal infections. To describe the clinical manifestations, explaining them pathogenically. To know the paraclinical methods in use. To be able to properly apply pathogenic and symptomatic treatment.</i> | Habitat. Actuality. Pathogenesis stages Clinical picture Laboratory diagnosis Principles of treatment and prophylaxis |

I. PROFESSIONAL SKILLS (PS) AND TRANSVERSAL (TC) COMPETENCES AND CONCLUSIONS OF THE COURSE

✓ Professional skills (specific) (PS)

- ✓ • PS1.A thorough knowledge of the morphological, antigenic structure peculiarities and toxicity of the pathogen; the ways of transmission of various parasitosis and tropical diseases.
- ✓ • PS2. Performing various practical manipulations and procedures to carry out professional activities specific to the specialty of Infectious Diseases;
- ✓ • PS3. Developing the diagnosis, treatment and rehabilitation plan in various pathological situations and selecting the appropriate therapies;
- ✓ • PS4. The use of medical techniques, instrumental and laboratory investigations, digital technologies to manage the patient's therapeutic course.
- ✓ • PS5. Planning, co-ordinating and conducting health promotion activities and prophylactic measures to improve individual and community health.

✓ Transversal competences (TC)

- ✓ TC1. Responsible execution of professional tasks.
- ✓ TC2 Compliance with professional ethics and the legislation in force.
- ✓ TC3 Promoting logical reasoning, practical applicability, assessment and self-assessment in decision-making;
- ✓ TC4 Performing activities and exercising the roles specific to the team work in various medical institutions.
- ✓ TC5 Continuous improvement of the personal professional training;
- ✓ TC6. Effective use of language skills, knowledge in information technologies, research and



CD 8.5.1 CURRICULUM DISCIPLINĂ

Redacția: 06

Data: 28.02.2018

Pag. 7/9

communication skills.

✓ Conclusions of the course

- to understand the importance of studying parasitology and tropical diseases, mainly in the context of the migration of population and climate change;
- to identify the risk of contracting a parasitic and tropical disease.
- to perform the diagnosis of the most common infectious diseases;
- to assess the results of the paraclinical investigations;
- to apply etiotropic treatment according to etiology;
- to solve situational problems, processing multilaterally and critically the information received;
- to be able to prove personal opinion and accept the diversities of the clinical manifestations of infectious diseases.
- to be able to appreciate the importance of studying Parasitology and Tropical Diseases in the context of Internal Medicine
- to creatively approach the problems of clinical medicine
- to deduce interrelations between Parasitology and Tropical Diseases and other clinical disciplines
- to have skills to implement and integrate the knowledge gained in personal medical practice
- to be able to evaluate and self-assess the knowledge in the field
- to be able to assimilate new achievements in Infectious Diseases

II. INDIVIDUAL STUDENT'S WORK

| Nr. | The expected result | Implementation Strategies | Evaluation criteria | Time of implementation |
|-----|--------------------------------------|--|--|------------------------|
| 1. | Exploring the Sources of Information | Reading the summary of lectures and / or the material from the textbook to the topic, in order to memorize it. Marking topics that are unintelligible or need clarification. If necessary, selecting the source of additional information on the topic. Making generalizations and conclusions. | The ability to choose the important matters; interpretative abilities; volume of the work. | During the module |
| 2. | Clinical case investigation | Establishing clinical case. Drawing up the research plan. Setting the terms of execution. Determining the technical presentation method Planning the presentation components. The actual realization. Discussions and conclusions. | Presentation of the clinical case investigation | During the module |
| 3. | Reports | Choosing the topic of the research; elaboration of the plan, setting the terms of the realization and bibliographic sources. | Report's presentation | During the module |
| 4. | Bibliography review | Choosing the subject Online search | Bibliography review presentation | During the module |



CD 8.5.1 CURRICULUM DISCIPLINĂ

Redacția: 06

Data: 28.02.2018

Pag. 8/9

| | | | |
|--|---|--|--|
| | Selecting the material Synthesis of the studied material Discussions Conclusions | | |
|--|---|--|--|

III. METHODOLOGICAL SUGGESTIONS FOR TEACHING-LEARNING-ASSESSMENT

Teaching and learning methods used

Lectures

- *Introductory*
- *Daily*
- *Answering the questions*
- *Conclusions*

Seminars

- *Case investigation*
- *Rope play*
- *Workshops*
- *Individual work*
- *Clinical observation*
- *Work with medical documentation*
- *Synthesis*
- *Problem solving in group*
- *Demonstration*
- *Brainstorming*
- *Games*
- *Group debates*
- *Small groups discussions*
- *Presenting audio-visual aids*

- Applied didactic strategies / technologies (specific to the discipline)

“Four corners” , „Brainstorming”; „Case investigation”; „Round table/interactive discussions”; Creative controversy: Problem solving in group

Methods of assessment (including the methodology of the final grade calculation)

Daily:

- thematic controls
- tests
- clinical case investigation
- observations of benefits
- practical demonstration
- feed back
- written assessments
-

Final:

- Practical skills evaluation based on the clinical cases – 50 %
- Test – 50 %

How to round up marks in the evaluation steps



CD 8.5.1 CURRICULUM DISCIPLINĂ

Redacția: 06

Data: 28.02.2018

Pag. 9/9

| Intermediate marks scale (annual average, grades from the exam steps) | National scoring system | ECTS Equivalent |
|---|-------------------------|-----------------|
| 1,00-3,00 | 2 | F |
| 3,01-4,99 | 4 | FX |
| 5,00 | 5 | E |
| 5,01-5,50 | 5,5 | |
| 5,51-6,0 | 6 | |
| 6,01-6,50 | 6,5 | D |
| 6,51-7,00 | 7 | |
| 7,01-7,50 | 7,5 | C |
| 7,51-8,00 | 8 | |
| 8,01-8,50 | 8,5 | B |
| 8,51-8,00 | 9 | |
| 9,01-9,50 | 9,5 | A |
| 9,51-10,0 | 10 | |

The average annual mark and the scores of all the final examinations (computer assisted, test, oral) - will be expressed in numbers according to the scoring scale (according to the table), and the final grade obtained, expressed in two decimal digits will be transferred to the mark book.

Failure to attend the examination without good reason is recorded as "absent" and is equivalent to 0 (zero). The student is allowed to have 2 repeated attempts of the failed exam.

IV. RECOMMENDED BIBLIOGRAPHY

- A. Obligatory:

1. *Harrison`s principles of internal medicine. Part six. Infectious diseases-19-th edition, 2015.*

- B. Additional:

1. *Infectious Diseases eMedicine http://emedicine.medscape.com/infectious_diseases.*