

## **Course description for Infectious Diseases and Epidemiology**

Type of course: Full-time

Number of ECTS points: 12

Course Organizer: Prof. Janez Tomažič, MD, PhD

Year: 2017/2018

Participant Departments: Department of microbiology and immunology, Department of Pathology, Department of Public Health, Department of Radiology, Institute of Pharmacology and Experimental Toxicology, Department of Internal Medicine- nuclear medicine.

Date of course announcement: September 20<sup>st</sup> 2017

### **1. Course objectives**

The course will include the study of epidemiology, etiopathogenesis, clinical picture, complications, diagnostics (laboratory, microbiological, imaging, endoscopic, etc.), differential diagnosis, broad-spectrum and targeted antimicrobial treatment, rational use of antimicrobial drugs, prevention of the most important and most common infectious diseases and the basis of health-related infections (hospital hygiene).

The student will learn about:

- the approach to the patient with an infectious disease (history, physical examination, basic laboratory and microbiological examinations),
- antimicrobial drugs (rational use of antimicrobial drugs, safety in pregnancy and during lactation),
- systemic infections (definition of sepsis and bacteraemia, pathogenesis, etiology and treatment),
- rash diseases,
- infections by organ systems (respiratory tract, cardio-vascular, gastrointestinal tract, urinary tract, central nervous system, etc.),
- infections in immunocompromised patients (HIV/AIDS, organ transplant recipients, cancer patients),
- travel medicine,
- tropical medicine,
- sexually transmitted infections,
- zoonotic infections (lyme disease, anthrax, brucellosis, leptospirosis, listeriosis)
- fungal infections,
- parasitic infections (toxoplasmosis, giardiasis, echinococcosis, etc.),
- hospital-acquired infections (epidemiology, measures to prevent hospital infections, etc.),

- prevention of infectious diseases (active and passive immunization, chemoprophylaxis),
- bioterrorism-related infections.

## 2. Learning methods

The exact course of the study is described in the online classroom of the Department of Infectious Diseases and Epidemiology - see MFUL website. A few days before the exam, we publish a list of oral exams: teacher, date and time. We also publish any changes and news. **It is important to follow the online classroom!** On the first day of study we will introduce the course with the help of our online classroom (everything you are interested in and might be afraid to ask).

**In nine weeks**, the student has to learn the most important topics of the subject. Our course is based on practical clinical work, lectures, seminars and guest lectures (seminar work).

**Clinical work** (3 days/week, 5 lecture hours, > 90% attendance required) is the most important part of acquiring knowledge. Therefore, a student may miss the clinical work only once, otherwise an excuse note is required. Under objective circumstances, the student can make up the absence at the clinical work, but this is an exception (until now there were no problems). You can find the description of the clinical work, rules of conductance, schedule and daily list of assistants who conduct the clinical work (updated regularly) in the online classroom.

**Lectures** (1 day/week, 5 lecture hours, 70% attendance): comprehensive and up-to-date lectures on the most important topics in infectious diseases. The schedule and the content of all lectures is published in the online classroom. Many of these lectures can also be seen in the form of podcasts and there are also some videos of clinical signs of a disease (for example Infectious Mononucleosis).

**Seminars** (1 day/week, 3 lecture hours, 80% attendance), which were a "students' nightmare" we streamlined. There are 9 seminars in 9 weeks. The first seminar is prepared by the faculty (topic of hospital acquired infections), the next 8 are done by the students (in groups of 6-8 students) – one also by Erasmus students. The schedule of seminars is made on the first day of the course. All instructions on how to prepare the seminar and a seminars from previous years are available at the online classroom (no copy/paste allowed!!). The seminar is also attended by a microbiologist and therefore the content of the seminar is commented by a physician and a microbiologist, who are also available for all questions. I highly recommend that you prepare for the seminar because we can clarify dilemmas / relevance / novelties, etc. - 9 seminars, 9 important infectious topics that you can master in this way.

**Guest lectures by other Departments** - Seminar lessons (1 day / week, 1 lecture hour, 80% attendance): to develop a better understanding of our course colleagues from related subject areas are going to collaborate through practical lectures. They will enable the students to better understand the etiology (Department of Microbiology and Immunology), epidemiology (Department of

Public Health), diagnostics (Department of Microbiology and Immunology, Department of Pathology, Department of Radiology, Department of internal medicine - nuclear medicine) and antimicrobial treatment (Institute of Pharmacology and Experimental Toxicology) of infectious diseases. The schedule and context of lectures will be published at the online classroom.

### **3. Assessment**

There is no official assessment of knowledge and skills throughout the course. Clinical work includes a relaxed conversation with the assistant to discuss the history, physical exam and diagnosis of patients seen by the students. Throughout the discussion students are asked questions about microbiology etc. and it is expected of them to know a lot, but more importantly we understand that the students are here to learn as much as possible. We expect more in depth knowledge on the subject presented by the students in the seminars, therefore the conversation is more "bilateral".

### **4. Requirements for final examination**

To approach the final exam students must pass exams from previous years: basic exams in microbiology, pathology, pathophysiology, pharmacology and clinical propedeutics. The student has to attend lectures, seminars and clinical work (see above) and has to complete the written exam in clinical microbiology. The questions for this exam are presented throughout the microbiology guest lectures. More detail on this exam is available at the online classroom.

### **5. Final exam**

The final exam consists of oral exam, which consists of patient examination and a discussion of his medical history, physical exam and diagnosis and additional 3-4 theoretical questions. The exams will take place from 12. to 15. June and from 19. to 22. June, 2018.

The list of exam topics, clinical pictures and skills (available at MFUL website):

Explanation of labels in clinical pictures:

1 = A medical student must identify and classify a clinical picture from a literature or description to find additional information.

2 = In addition to the knowledge described in point 1, a medical student must be able to deal with the patient with this clinical picture in everyday practice (he knows symptoms, signs, diagnostic procedures and differential diagnoses and general principles of treatment).

D = In addition to knowledge described in points 1 and 2, a medical student must independently diagnose a diseases based on clinical examination and basic diagnostic tests (eg laboratory tests or X-rays).

T = In addition to knowledge described in points 1, 2 and D, a medical students should be able to independently treat the disease, injury or illness (without complications).

CLINICAL PICTURE 1 2 D T

Streptococcal infections  
Streptococcal pharyngitis T  
Scarlet fever T  
Erysipelas T  
Impetigo - pyoderma T  
Pneumococcal infections T  
Toxic shock syndrome 2  
Necrotizing fasciitis 2  
Staphylococcal infections  
Staphylococcal skin infections T  
Staphylococcal sepsis 1  
Staphylococcal endocarditis 1  
Staphylococcal osteomyelitis 2  
Staphylococcal Arthritis D  
Toxic shock syndrome T  
Infections with most important Gramnegative bacterias 2  
Infections with multi drug resistente bacterias 2  
Heart and vascular infections:  
– Infectious endocarditis 2  
– Pericarditis 2  
– Miocarditis 2  
– Mediastinitis 1  
– Management of vascular and prosthetic graft infections 1  
– Rheumatic fever 2  
Urinary tract infections T  
Intestinal infections:  
– Typhoid fever 1  
– Paratyphus A, B 1  
– Acute gastroenterocolitis T  
– Food poisoning T  
– Cholerae T  
– Travelers' Diarrhea T  
– Diarrhea in immunocompromised patients 1  
– Clostridium difficile colitis 2  
Infections of the central nervous system:  
– Childhood paralysis (poliomyelitis) 1  
– Bacterial meningitis 2  
– Aseptic meningitis 2  
– Tick-borne encephalitis D  
– Herpetic (HSV type 1, 2) meningoencephalitis 2  
– Fungal meningoencephalitis 1  
– Parasitic meningoencephalitis 1  
Respiratory infections:  
– Diphtheria 1  
– Infectious mononucleosis D T  
– Herpes gingivostomatitis T  
– Acute pharyngitis T

- Classical bacterial pneumonia T
- Atypical Pneumonia T
- Pertussis 2
- Influenza 2 T
- Viral respiratory infections 2 T
- Adenoviral infections 2 T

Rash diseases:

- Measles (morbilli) D
- German measles (rubella) D
- Erythema infectiosum D
- Exanthema subitum D
- Chickenpox (varicella) - herpes zoster T
- Rickettsial infections 1
- Other rash diseases

Viral hepatitis:

- Hepatitis A T
- Hepatitis B D
- Hepatitis C D
- Hepatitis E T

Parasitic diseases:

- Toxoplasmosis D
- Giardiasis T
- Trichinellosis 2
- Echinococcosis 2
- Cysticercosis 2
- Infection with *Pneumocystis jirovecii* 2

Zoonoses:

- Lyme borreliosis T
- Anaplasmosis and erlichiosis 2
- Leptospirosis T
- Listeriosis 2
- Brucellosis 2
- Tularemia 2
- Anthrax 2
- Cat scratch disease D
- Toxocariasis 2
- Rabies 1

Tropical diseases:

- Malaria 1
- Amoebic dysentery 1
- Lishmaniasis 1
- Trypanosomiasis 1
- Shistosomsasis 1
- Hemorrhagic fever 1
- Filariasis 1
- Plague 1
- Travelers diseases 2

Anaerobic infections:

- Tetanus D
- Botulism 1
- Other infections caused by anaerobes 1

Other infections:

- Fungal infections D
- Health-related infections 2
- HIV infection - AIDS 2
- Infections in immunocompromised patients 2
- Infections in prosthetic materials 2
- Infections in transplant patients 2

Fever of unknown origin 2

Bioterrorism infections 1

Fever T

Pathophysiology of infectious diseases 1

Sepsis, septic shock 2

Antibiotics, antiviral, antifungal and antiparasitic drugs:

Infections with herpesviruses 2

Pathogenesis, diagnosis, treatment and prevention of infections in all organ systems 1

Epidemiology of major infectious diseases in Slovenia and the world 1

Prevention of infectious diseases (chemoprophylaxis, passive immunoprophylaxis) 1

Vaccines in clinical use (efficacy, side effects)

Clinical resistance to antibacterial, antiviral, antifungal and anti-parasite medicines

Explanation of labels in skills

1 = has theoretical knowledge of skills.

2 = has theoretical knowledge of skills and has already seen it.

3 = has a theoretical knowledge of the skill, has performed it several times under supervision.

4 = has theoretical knowledge of skills and can routinely perform them.

SKILLS 1 2 3 4

Inspection and palpation of the skin 4

Assessment of turgidity, rash and skin color 4

Removal and microscopic evaluation of skin scrape 1

Excision of skin, subcutaneous tissue and muscle 1

Exam of the oral cavity and throat 4

Palpation and assessment of lymph nodes 4

Exam of meningitis signs 4

Assessment of consciousness 4

Lumbar puncture 2

Percussion and lung auscultation 4

Heart auscultation 4

Palpation of the liver 4

Palpation of the spleen 4

Palpation of kidneys 4  
Pleural puncture 1  
Preparation and examination of blood smear 2  
Preparation and inspection of a thick blood film 1  
Assessment of Differential Blood Picture 2  
Microscopic examination of liquor 1  
Microscopic examination of the pleural fluid 1  
Microscopic examination of sputum 2  
Blood extraction for hemoculture 2  
Collection of a throat swab 2  
Collection of transnasal swab 2  
Collection of a wound swab 3  
Collection of sputum for Investigations 3  
Sampling of urine for investigation 2  
Sampling of stool for investigations 2  
Sampling of urethra swab 1  
Performance of rectal swab 2  
Evaluation of microbiological findings 3

## **6. Other advice on studying for this course**

Students should draw on knowledge from "organized forms of our lessons" and our new book "Infectious diseases 2017". Other recommended literature can be found at the online classroom.

## **7. Other**

Our wish: students should enjoy during studying for our course.