

INFECTIOUS DISEASES

Total credits:

8.5

Theory credits:

3.5

Practical credits:

5

GENERAL OBJECTIVES

During the training period students are expected to acquire the theoretical knowledge and clinical skills needed to identify the main problems faced in the field of infectious diseases.

Students must be able to identify the correct diagnosis and treatment through the rational application of current diagnostic methods. The content of the infectious diseases programme is divided into the following sections.

SPECIFIC OBJECTIVES

A. *At the end of the training process, students must be able to identify the main **problems** faced in infectious pathology, specifically in:*

1. Acute febrile syndrome.
2. Prolonged febrile syndrome.
3. Meningeal syndrome.
4. Pulmonary condensation syndrome.
5. Acquired immune deficiency syndrome.
6. Adenopathy syndrome.
7. Mononucleosis syndrome.
8. Sepsis and septic shock.
9. Osteoarticular infection.
10. Acute infectious diarrhoea.
11. Hepatosplenomegaly.
12. Infections of the soft parts.
13. Nosocomial infections.
14. Infections in intravenous drug addicts.
15. Cardiovascular infections.
16. Imported pathology.

B. *Students should know the theoretical bases of the **diagnostic methods** in infectious pathology, specifically in:*

1. Epidemiological survey.
2. Physical examination.
3. Conventional microbiological cultures.
4. Serological diagnosis.
5. Molecular biology.
6. Microbial sensitivity tests.
7. Methodology in rapid microbiological diagnosis.
8. Simple radiology.
9. Interventional radiology.
10. Isotopic studies.
11. Other imaging methods: computerized Axial Tomography (CAT), magnetic resonance.

C. Students should know the diagnosis and medico-surgical treatment of the principal **infectious diseases**, specifically in:

1. Bacteremia, sepsis, septic shock.
2. Exudative pharyngitis.
3. Otitis, sinusitis.
4. Bacterial endocarditis.
5. Cerebral abscess.
6. Bacterial meningitis.
7. Aseptic meningitis.
8. Tuberculosis.
9. Nosocomial pneumonia.
10. Community-acquired pneumonia.
11. Anaerobic pneumonia.
12. Salmonellosis.
13. Brucellosis.
14. Listeriosis.
15. Tetanus.
16. Botulism.
17. Gaseous gangrene.
18. Rickettsiosis.
19. Leptospirosis.
20. Invasive mycosis.
21. Influenza.
22. HIV infection.
23. Toxoplasmosis.
24. *Pneumocystis carinii*.

D. Students should have acquired the following **skills**:

- *Recognize the microbial agents responsible for the most important infections, their correct taxonomy and principle biological characteristics of clinical interest.*
- *Be able to obtain a satisfactory clinical history covering personal and epidemiological histories and the most relevant clinical data for the diagnosis of a possible infection. Know the epidemiological importance of the different community infections.*
- *Use physical examination to identify the most relevant data for the diagnosis of a possible infection (meningeal syndrome, pulmonary condensation, hepatosplenomegaly, adenopathies, heart murmur, exanthema, fluctuation, etc.).*
- *Be able to interpret the most relevant hematological and biochemical analytical alterations for the diagnosis and development of an infectious process and know when they should be requested.*
- *Know the pathogeny and natural history of the principal bacterial, viral, mycotic and parasitic infectious processes and the prognosis of the principal infectious diseases, with and without appropriate treatment.*
- *Know how to request the most appropriate microbiological examinations for the diagnosis of all types of infection (stains, cultures, serologies, etc.) and how to interpret them. Understand the sensitivity and specificity of the principal diagnostic tests.*
- *Be able to interpret the basic data from simple radiological examinations in relation to infectious processes and know when more sophisticated examinations are required.*
- *Know how to perform simple diagnostic techniques (lumbar puncture, pleural puncture, paracentesis, smear collection, respiratory secretions, hemocultures, etc.).*
- *Know the correct procedure for managing successive examinations when dealing with the principal syndromes and clinical situations of infectious pathology: Acute febrile syndrome, septic shock, prolonged*

febrile syndrome, meningeal syndrome, pathology of patients with drug addictions, diarrheic syndrome, pulmonary condensation, serious infection of the soft parts, etc.

- *Know the sensitivity and resistance mechanisms of microorganisms in the different antimicrobial agents.*
- *Know the principal therapeutic patterns used in community infections, the treatment strategies for nosocomial infections and the basis of antiviral therapy.*
- *Follow the correct procedures when dealing with patients with infectious-contagious pathology and have particular knowledge of the social determinants of HIV infection.*
- *Be able to direct the diagnosis and clinical therapeutic management of the principal imported diseases.*
- *Apply the concepts of healthcare education in daily practice.*
- *Know the frequency and types of infection that complicate the evolution of patients admitted to hospital for other diseases and the possible repercussions. Set an example by taking all feasible precautions against the transmission of nosocomial infections (washing hands, standard isolation procedures, etc.).*
- *Know the preventive strategies for transmitted diseases, including behavioural strategies, prophylaxis and vaccination.*

PROGRAMME AND TEACHING STRUCTURE

TC = theory class

PS = practical seminar

SL = self learning

Section A. GENERALITIES

Topic 1. Introduction. Clinical manifestations of infectious diseases. Short and long term febrile syndrome. **TC**.
Dr. Gatell

Topic 2. Pathogeny of infections. Host defence mechanisms. **SL**

Section B. HUMAN PATHOGENIC MICROORGANISMS: CLASSIFICATION, DIAGNOSTIC METHODS AND ANTIBIOGRAM

Topic 1. Structure and classification of bacteria of clinical interest. Structure, composition and replication of viruses. **SL**

Topic 2. Sampling and diagnostic methods in clinical microbiology. Use and interpretation of serologies. **TC**.
Dra. Jiménez de Anta (Microbiology)

Topic 3. Antibioqram. Methods and interpretation. **TC**. Dra. Jiménez de Anta (Microbiology)

Section C. ANTIMICROBIAL AGENTS, IMMUNOTHERAPY AND VACCINES

Topic 1. Choice of antimicrobial treatment. Resistance mechanisms. Mechanisms of antibiotic action. Resistance to antibiotics. **TC**. Dr. Miró

Topic 2. β -lactamic antibiotics and glycopeptides. **SL**

Topic 3. Quinolones. **SL**

Topic 4. Tetracyclines, cotrimoxazole and metronidazole. **SL**

Topic 5. Macrolides and clindamycin. **SL**

Topic 6. Tuberculostatics. General principles of the treatment and prophylaxis of tuberculosis. **TC**. Dr. Gatell/Soriano

Topic 7. Virological diagnosis and antiviral drugs. **TC**. Dr. Pumarola

Topic 8. Antibiotic prophylaxis and anti-infectious immunotherapy. Vaccines for adults. **SL**

Section D. SYNDROMES IN INFECTIOUS PATHOLOGY

- Topic 1. Acute meningitis, including meningococcal infections. **TC**. Dr. Gatell
- Topic 2. Lymphocytic meningitis. **TC**. Dr. Gatell
- Topic 3. Encephalitis, infectious myelitis and neuritis. Cerebral abscess. Subdural empyema. Epidural abscess. Infectious cranial phlebitis. **SL**
- Topic 4. Sinusitis. Otitis, tonsillitis and pharyngitis. **TC**. Dra. Moreno
- Topic 5. Acute and chronic bronchitis. **SL**
- Topic 6. Pneumonia, including pneumococcal and legionella infections (1). **TC**. Dra. Moreno
- Topic 7. Pneumonia, including pneumococcal and legionella infections (2). **TC**. Dra. Moreno
- Topic 8. Pulmonary abscess. Pleural empyema. **SL**
- Topic 9. Infectious endocarditis. **TC**. Dr. Miró
- Topic 10. Infections associated with the use of intravascular catheters. Phlebitis. **TC**. Dr. Martínez
- Topic 11. Sexually transmitted diseases. **PS**. Dra. Moreno / Dra. Benito
- Topic 12. Infections of the skin and soft parts. Gaseous gangrene. Tetanus. **TC**. Dr. Miró
- Topic 13. Septic arthritis. Osteomyelitis. **TC**. Dr. Martínez
- Topic 14. Hepatic, splenic, perinephritic, intra-abdominal and soft parts abscesses. **SL**
- Topic 15. Cystitis and pyelonephritis. **TC**. Dr. Miró / Dr. Horcajada
- Topic 16. Bacterial prostatitis. **SL**
- Topic 17. Infectious gastroenteritis. **TC**. Dra. Moreno
- Topic 18. Common cold. Influenza syndrome. Influenza. **CT**. Dr. Gatell
- Topic 19. Infectious adenitis. Cat scratch disease. Mononucleosis syndrome. **SL**
- Topic 20. Ocular infections. **SL**
- Topic 21. Pathological anatomy of infections. **TC**. Dra. Ribalta (Pathological Anatomy)
- Topic 22. Radiology of infections (1). **TC**. Drs. Mercader / Serra Creixens (Image Diagnosis)
- Topic 23. Radiology of infections (2). **TC**. Drs. Mercader / Serra Creixens (Image Diagnosis)

Section E. HUMAN PATHOGENIC MICROORGANISMS: CLINICAL ASPECTS AND TREATMENT

- Topic 1. Gram-positive coccal infections. Staphylococci. **AA**
- Topic 2. Gram-positive coccal infections. Streptococci. **AA**
- Topic 3. Enterobacterial infections. Sepsis. Septic shock. **TC**. Dr. Mallolas
- Topic 4. *P. aeruginosa* infections and other gram negative bacilli. **TC**. Dr. Mallolas
- Topic 5. Brucellosis and typhoid fever. **TC**. Dra. Moreno
- Topic 6. Non-sporulated anaerobic infections. **PS**. Dr. Gatell / Dr. Garcia
- Topic 7. Microbacterial infections. Tuberculosis and atypical mycobacteria. **TC**. Dr. Gatell / Dr. Soriano
- Topic 8. Fungal infections. Candidiasis, cryptococcosis and aspergillosis. **TC**. Dr. Gatell / Dr. J.A. Martínez
- Topic 9. Clinical history of travellers. Medical geography. **TC**. Dr. Corachan
- Topics 10-11. Paludism. **TC**. Dr. Corachan
- Topics 12-13. Amebiasis. **PS**. Dr. Corachan
- Topics 14-15. Filariasis and leishmaniasis. **TC**. Dr. Corachan
- Topic 16. Intestinal nematodes. **SL**.
- Topic 17. Schistosomiasis. **PS**. Dr. Corachan
- Topic 18. Viral hemorrhagic fevers. **TC**. Dr. Corachan
- Topic 19. Rickettsial infections. Mediterranean spotted fever and Q fever. **PS**. Dr. Mallolas
- Topic 20. Herpes group viral infections. **TC**. Dr. Mallolas
- Topic 21. Enteroviral infections. **SL**
- Topic 22. Borreliosis. **SL**
- Topic 23. Leptospirosis. **SL**

Topic 24. Actinomycete and nocardial infections. **SL**

Section F. SPECIAL SITUATIONS

Topic 1. Infections associated with animal bites. Rabies. **SL**

Topic 2. Infections in intravenous drug addicts. **PS**. Dr. Miró

Topic 3. HIV and AIDS infections. Antiretroviral treatment. **TC**. Dr. Gatell

Topic 4. Opportunist infections in AIDS. Pneumocystis carinii and toxoplasma. **TC**. Dr. Miró

Topic 5. Infections in receivers of solid organ transplants (renal, cardiac and hepatic). **TC**. Dra. Moreno

Topic 6. Granulocytopenic infections in receivers of bone medulla transplants. **PS**. Dr. Martínez

Topic 7. Infections in special situations: infections caused by listeria, pregnancy, diabetes mellitus, old age, hepatic cirrhosis and chronic renal insufficiency. **SL**

Topic 8. Emergencies in infectious pathology. **PS**. Dr. Martínez

Topic 9. Role of Chlamydia in non-respiratory pathology. **SL**

Topic 10. Intrahospital infections. **TC**. Dr. Gatell / Dr. J.A. Martínez

Practical teaching

In-hospital clinical experience from 8am to 1pm, Monday to Thursday. Infectious diseases ward (stairway 4, floor 4).

Tutorials/seminars will be held from 8 to 9am. Seminar room.

Tutorials

A tutor will be assigned to all students that request one. Students will also be provided with a cd-rom containing annotated images related to course content.