

RHEUMATOLOGIC AND IMMUNE SYSTEM DISEASES

Total credits:

5

Theory credits:

2

Practical credits:

3

GENERAL OBJECTIVES

During the training period students are expected to acquire the theoretical knowledge and clinical skills needed to identify the main problems posed by immune diseases and the principal medical diseases of the bones and joints.

The knowledge students must acquire from the study of the above diseases is divided into the following sections.

SPECIFIC OBJECTIVES

At the end of the training process, students should:

A1. *Be able to identify the main **problems** of immunopathology and joint pathology, specifically in:*

1. Systemic manifestations (fever, asthenia, anorexia, weight loss, general poor health, etc.).
2. Cardiovascular manifestations (pericarditis, valvulopathies, arterial and venous thromboses, Raynaud's phenomenon, reticular livedo, erythromelalgia, purpura, erythema nodosum, etc.).
3. Respiratory manifestations (cough, dyspnea, hemoptysis, pleuritis, etc.).
4. Digestive manifestations (dysphagia, abdominal pain, hepatopathy, etc.).
5. Renal manifestations (nephrotic syndrome, renal insufficiency, hypertensive crisis).
6. Neurological manifestations (headaches, neuropathies, etc.).
7. Musculoskeletal manifestations (arthralgia, arthritis, myalgia, muscle weakness).
8. Cutaneo-mucosal manifestations (malar erythema, cutaneous sclerosis, aphtae, angioedema, xerostomy, xerophthalmia, etc.).
9. Ophthalmic manifestations (loss of vision, uveitis, etc.).
10. Hematologic manifestations (cytopenia, hypercoagulability, adenomegalia, etc.).

A2. *Be able to identify the main **problems of joint pathology, specifically:***

1. Acute and chronic arthritis.
2. Inflammatory arthralgia.
3. Mechanical arthralgia.
4. Structural disorders of the joints and spinal cord.
5. Mechanical rachialgia.
6. Inflammatory rachialgia.
7. Regional syndromes and rheumatism of the soft parts (muscle, tendons, serous cavities).
8. Bone pain (fragility fractures, metastatic pain).
9. Articular manifestations of other systemic diseases.

B. *Know the theoretical bases of the **diagnostic methods** in immunopathology and joint pathology specifically in:*

1. Anamnesis and general physical examination.
2. General analysis.
3. Immunological analysis (antinuclear antibodies, neutrophil anticytoplasm, antophospholipids, complementary factors, rheumatoid factor).
4. Analysis determining the parameters of bone mineral metabolism (hormonal, markers of bone turnover, etc.).

5. Simple radiology of the thorax and abdomen, radiology of the spinal column, joints and sacroiliac joints.
6. Computerized axial tomography and magnetic resonance.
7. Ecography and eco-Doppler.
8. Electromyography.
9. Isotopic analysis (parotid and bone gammagraphy).
10. Bone densitometry.
11. Biopsies (skin, muscle, nerves, subcutaneous fat, lips, temporal artery, kidney, bone, sinovial, etc.).
12. Arthroscopy of the locomotor apparatus.

C. Know the diagnosis and medical-surgical therapeutics of the principal **diseases** of the immune system, bones and joints.

1. Immune diseases

1. Pathology of the immune system.
2. Systemic lupus erythematosus.
3. Progressive systemic sclerosis (sclerodermia).
4. Idiopathic inflammatory myopathies (dermatopolymyositis).
5. Sjögren's Syndrome.
6. Mixed connective tissue disease
7. Antiphospholipid syndrome.
8. Primary systemic vasculitis. Polyarteritis nodosa.
9. Churg-Strauss allergic granulomatous vasculitis.
10. Wegener's granulomatosis.
11. Hypersensitivity vasculitis.
12. Giant cell arteritis.
13. Buerger's disease.
14. Behçet's disease.
15. Kawasaki's disease.
16. Other types of vasculitis.
17. Crioglobulinemia.
18. Idiopathic midline granuloma.
19. Panniculitis and other disorders of subcutaneous fat.
20. Relapsing polychondritis.
21. Familial Mediterranean fever.
22. Systemic idiopathic fibrosis.
23. Sarcoidosis.
24. Amyloidosis.
25. Hypersensitivity diseases.
26. Primary and secondary immunodeficiencies.

2. Locomotor apparatus

1. Postmenopausal osteoporosis.
2. Male osteoporosis.
3. Corticoid-induced osteoporosis.
4. Osteomalacia caused by vitamin D deficiency.
5. Hypophosphatemic osteomalacia.
6. Paget's disease of bone.
7. Rheumatoid arthritis.
8. Juvenile chronic arthritis.

9. Ankylosing spondylitis.
10. Reactive arthritis.
11. Reiter's disease.
12. Enteric rheumatism.
13. Psoriatic arthritis.
14. Gout.
15. Chondrocalcinosis.
16. Hydroxyapatite-related diseases.
17. Primary amyloidosis.
18. Secondary amyloidosis.
19. Hemodialysis-associated amyloidosis.
20. Axial arthrosis.
21. Peripheral arthrosis.
22. Fibromyalgia.
23. Rheumatisms of soft parts.

D. *Have acquired the following **skills**:*

- Obtain a detailed anamnesis of the patient, covering patient's description of symptoms, the corresponding interpretation and the systematic investigation of other possible symptoms not initially expressed by the patient.
- Correctly perform a physical examination. It is important for this to be generalized to include the following examinations: thoracic, abdominal, vascular, cutaneous, ocular, neurological and of the locomotor apparatus.
- Interpret the general, immunological and ocular analytics.
- Interpret radiographies of all the joints and the spinal column, as well as simple radiography of the thorax and abdomen. Knowledge of other, complementary image-based diagnostic examinations: arterographies, phlebographies, computerized axial tomographies, magnetic resonance, eco-Doppler ecographies, electromyographies, isotopic analyses (gammagraphies) and densitometries.
- Know the indications, contraindications, possible complications and sequels of the most commonly practised biopsies for the study of rheumatologic and immune system diseases (sinovial, skin, muscle, nerve, subcutaneous fat, gum, temporal artery, kidney, etc.).
- Interpret anatomopathological reports to collaborate with the pathologist in maintaining a good correlation between morphological findings and the clinical evolution of the patient.

PROGRAMME

A. IDENTIFICATION OF PROBLEMS

1. Systemic manifestations (fever, asthenia, anorexia, weight loss, general poor health, etc.)

Identify the various systemic manifestations (fever, asthenia, anorexia, weight loss, general poor health, etc.) and their characteristics (onset, duration, association with other symptoms, etc.). Identify these manifestations as indicative of the presence of a specific disease of the immune system.

2. Cardiovascular manifestations (pericarditis, valvulopathies, arterial and venous thromboses, Raynaud's phenomenon, reticular livedo, etc.)

Identify the most frequent cardiovascular manifestations in immune system diseases (pericarditis, valvulopathies, arterial and venous thromboses, Raynaud's phenomenon, reticular livedo, etc.) and their characteristics. Identify these manifestations as indicative of the presence of a specific disease of the immune system. Know the diagnostic tests that must be carried out for a more complete study of the cardiovascular system.

3. Respiratory manifestations (cough, dyspnea, hemoptysis, pleuritis, etc.)

Identify the most frequent respiratory manifestations in immune system diseases (cough, dyspnea, hemoptysis, pleuritis, etc.) and their characteristics. Identify these manifestations as indicative of the presence of a specific

disease of the immune system. Know the diagnostic tests that must be carried out for a more complete study of the respiratory apparatus.

4. Digestive manifestations (dysphagia, abdominal pain, hepatopathy, etc.)

Identify the most frequent digestive manifestations in immune system diseases (dysphagia, abdominal pain, hepatopathy, etc.) and their characteristics. Identify these manifestations as indicative of the presence of a specific disease of the immune system. Know the diagnostic tests that must be carried out for a more complete study of the digestive apparatus.

5. Renal manifestations (nephrotic syndrome, renal insufficiency, hypertensive crisis, etc.)

Identify the most frequent renal manifestations in immune system diseases (nephrotic syndrome, renal insufficiency, hypertensive crisis, etc.) and their characteristics. Identify these manifestations as indicative of the presence of a specific disease of the immune system. Know the diagnostic tests that must be carried out for a more complete study of the renal system.

6. Neurological manifestations (headaches, neuropathies, etc.)

Identify the most frequent neurological manifestations in immune system diseases (cephalies, neuropathies, etc.) and their characteristics. Identify these manifestations as indicative of the presence of a specific disease of the immune system. Know the diagnostic tests that must be carried out for a more complete study of the nervous system.

7. Muco-cutaneous manifestations (malar erythema, cutaneous sclerosis, aphtae, urticaria, angioedema, erythromelalgia, purpura, erythema nodosum, xerostomy, xerophthalmia, etc.)

Identify the most frequent cutaneo-mucosal manifestations in immune system diseases (malar erythema, cutaneous sclerosis, aphtae, urticaria, angioedema, erythromelalgia, purpura, erythema nodosum, xerostomy, xerophthalmia, etc.) and their characteristics. Identify these manifestations as indicative of the presence of a specific disease of the immune system. Know the diagnostic tests that must be carried out for a more complete study of the skin and mucosae.

8. Ophthalmic manifestations (loss of vision, uveitis, etc.)

Identify the most frequent ophthalmic manifestations in immune system diseases (loss of vision, uveitis, etc.) and their characteristics. Identify these manifestations as indicative of the presence of a specific disease of the immune system. Know the diagnostic tests that must be carried out for a more complete study of the ocular apparatus.

9. Hematologic manifestations (cytopenia, hypercoagulability, adenomegalia, etc.)

Identify the most frequent hematologic manifestations in immune system diseases (cytopenia, hypercoagulability, adenomegalia, etc.) and their characteristics. Identify these manifestations as indicative of the presence of a specific disease of the immune system. Know the diagnostic tests that must be carried out for a more complete study of the hematological system and hematopoietic organs.

10. Acute and chronic arthritis

Identify the presence of pain and tumefaction that may affect one or more joints. Additionally, discover its etiology, which may be: microcrystalline, due to a connectivopathy, infectious, reactive, or associated with a spondyloarthropathy.

11. Inflammatory arthralgia

Identify articular pain that is not associated with signs of tumefaction and discover the cause.

12. Mechanical arthralgia

Identify articular pain secondary to arthrosis, with particular attention to arthrosis of the hands, knees and hips.

13. Structural disorders of the joints and spinal column

Identify structural injuries (ligaments, static disorders, dimensional disorders, etc.) that can cause articular or axial pain.

14. Mechanical rachialgia

Identify the characteristics of spinal pain (cervical, dorsal, lumbar) as a manifestation of a discovertebral or interapophyseal disorder caused by spondylarthrosis.

15. Inflammatory rachialgia

Identify spinal pain as secondary to a spinal inflammatory process and determine whether it is secondary to a spondyloarthropathy or another cause.

16. Regional syndromes and rheumatisms of soft parts

Identify whether the pathology corresponds to a localized lesion of the locomotor apparatus (shoulder, wrist, knee, etc.) and analyze the cause. Know the pathologies of the serous cavities, which may be the cause of local pain, and the concept of generalized pain in fibromyalgia.

17. Bone pain

Establish that pain is secondary to bone pathology and discover the cause. Know the diagnostic tests that must be carried out for the study of fragility fractures or for the study of metastatic or pagetic pain.

18. Articular manifestations of other medical diseases

Identify articular symptomatology as secondary to another systemic disease (hematochromatosis).

B. THEORETICAL BASES OF DIAGNOSTIC METHODS IN DISEASES OF THE RHEUMATOLOGIC AND IMMUNE SYSTEMS

1. Anamnesis and general physical examination

Methodology that should be applied in the interview: inspection, palpation, percussion and auscultation of the different systems and apparatus. It is particularly important for the general examination to be generalized to include the following detailed examinations: cutaneous, ocular, thoracic, abdominal, vascular and neurological and of the locomotor apparatus.

2. General analysis

Know the value of the principal analytical tests (hemograms, coagulation, renal and hepatic profiles, etc.). Interpretation of the pathological findings in general analysis.

3. Immunological analysis (antinuclear antibodies, neutrophil anticytoplasm, antophospholipids, complementary factors, etc.)

Know the value of the principal immunological tests (antinuclear antibodies, neutrophil anticytoplasm, antophospholipids, complementary factors, etc.). Interpretation of the pathological findings in immunological study.

4. Simple radiology of the thorax and abdomen, radiographies of the principal joints, arteriographies and phlebographies

Know the directions for carrying out simple radiology of the thorax and abdomen, radiographies of the principal joints, arteriographies and phlebographies. Interpretation of the pathological findings made in these complementary tests.

5. Determinations that contribute to the diagnosis of metabolic bone diseases (osteoporosis, osteomalacia, Paget's disease of bone, etc.)

6. Ecography and eco-Doppler

7. Electromyography

8. Isotopic analyses

9. Bone densitometry

10. Biopsies

11. Rheumatological arthroscopy

Intra-articular examination with new small-diameter arthroscopes allows rheumatologists to clearly view the articular structures and perform manoeuvres during examinations to test the functional state of a joint. This technique makes it possible to study the majority of joints with local anaesthetic under semi-sterile conditions, with minimal risk and cost. Rheumatologists can establish correlations between clinical symptoms, image analyses and arthroscopic findings and obtain samples of sinovial tissue or cartilage for etiological or pathogenetic study. Arthroscopic cleaning has demonstrated therapeutic effects on arthritis and arthrosis and also allows extraction of foreign bodies and synovectomies of small joints.

C. DIAGNOSIS AND TREATMENT OF THE PRINCIPAL DISEASES OF THE IMMUNE SYSTEM AND LOCOMOTOR APPARATUS

C1. Immune system

1. Pathology of the immune system (theory class).
2. Systemic lupus erythematosus (theory class).
3. Progressive systemic sclerosis (sclerodermia) (theory class).
4. Idiopathic inflammatory myopathies (dermatopolymyositis) (theory class).
5. Sjögren's Syndrome (theory class).
6. Mixed connective tissue disease (self-study).
7. Antiphospholipid syndrome (planned clinical teaching).
8. Primary systemic vasculitis. Polyarteritis nodosa (theory class).
9. Churg-Strauss allergic granulomatous vasculitis (theory class + topic 8).
10. Wegener's granulomatosis (theory class).
11. Hypersensitivity vasculitis (self-study).
12. Giant cell arteritis (theory class).
13. Buerger's disease (self-study).
14. Behçet's disease (self-study).
15. Kawasaki's disease (self-study).
16. Other types of vasculitis (self-study).
17. Cryoglobulinemia (self-study).
18. Idiopathic midline granuloma (self-study).
19. Panniculitis and other disorders of subcutaneous fat (self-study).
20. Relapsing polychondritis (self-study).
21. Familial Mediterranean fever (self-study).
22. Systemic idiopathic fibrosis (self-study).
23. Sarcoidosis (theory class).
24. Amyloidosis (theory class).
25. Hypersensitivity diseases (self-study).
26. Primary and secondary immunodeficiencies (self-study).

C2. Locomotor apparatus

1. Postmenopausal osteoporosis (theory class).
2. Male osteoporosis (self-study).
3. Corticoid-induced osteoporosis (self-study).
4. Osteomalacia caused by vitamin D deficiency (theory class).
5. Hypophosphatemic osteomalacia (self-study).
6. Paget's disease (theory class).
7. Rheumatoid arthritis (theory class).
8. Juvenile chronic arthritis (self-study).
9. Ankylosing spondylitis (theory class).
10. Reactive arthritis (self-study).
11. Reiter's disease (self-study).
12. Enteric rheumatism (self-study).
13. Psoriatic arthritis (theory class).
14. Gout (theory class).
15. Chondrocalcinosis (theory class).
16. Hydroxyapatite crystal diseases (theory class).
17. Primary amyloidosis (theory class).
18. Secondary amyloidosis (self-study).

19. Hemodialysis amyloidosis (self-study).
20. Peripheral arthritis (theory class).
21. Fibromyalgia (self-study).
22. Rheumatisms of soft parts (theory class).

TEACHING STRUCTURE

THEORY CLASSES

Topics marked as theory classes in section C of the course programme.

PRACTICAL CLINICAL PROGRAMME

1. Seminars held during the rotation period in the corresponding Service.
2. Planning practical work and seminars.
3. Cutaneous manifestations.
4. Laboratory and radiological tests.
5. Clinical case.
6. Clinical case.
7. Immune pathology of transplantation.
8. Immunodeficiencies.
9. Semiology of pain in the locomotor apparatus.
10. Semiology of the hand and wrist.
11. Differential diagnosis of microcrystalline arthritis.
12. Complementary examinations in metabolic bone pathology.
13. Rehabilitation in rheumatological pathology.
14. Examination in rheumatology.
15. X-ray in pathology of the locomotor apparatus.
16. Bone densitometry.