Ministry of education and science of Ukraine
V. N. Karazin Kharkiv National University

MANAGEMENT OF A PATIENT WITH BACK PAIN (SPONDYLOARTRITIS)

In two parts

PART II. REACTIVE ARTHRITIS. PSORIATIC ARTHRITIS

Methodical recommendations
for the preparation of students of higher education in the 6th year of study
in the discipline «Internal Medicine»

Electronic resource

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Management of a patient with back pain (spondyloartritis). In two parts. Part II. Reactive arthritis. Psoriatic arthritis : methodical recommendations for the preparation of
M 24 students of higher education in the 6th year of study in the discipline «Internal Medicine» [Electronic resource] / compil. T. M. Tykhonova, N. Ye. Barabash, N. V. Lysenko, L. O. Martymianova. – Kharkiv : V. N. Karazin KhNU, 2025. – (PDF 28 p.)

The methodical recommendations demonstrate the management of a rheumatic patient with back pain syndrome on the example of reactive arthritis and psoriatic arthritis, included to the spondyloarthritis group. The definitions of reactive arthritis and psoriatic arthritis are given. An algorithm for their diagnosis is shown on the basis of complaints, anamnesis, objective examination, laboratory and instrumental investigations, as well as modern treatment protocols are explained.

For 6th year students for preparation for practical classes in Internal Medicine.

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CONTENTS

LIST OF ABBREVIATIONS

ACR	–	American Collegium of Rheumatologists
AS	–	ankylosing spondyloarthritis
AxSpA	–	axial spondyloarthritis
bDMARD	–	disease-modifying biological anti-rheumatic drugs
CASPAR	–	classification criteria for psoriatic arthritis
CD	–	Crohn's disease
CRP	–	C-reactive protein
csDMARD	–	synthetic disease-modifying anti-rheumatic drugs
DAPSA	–	disease activity in psoriatic arthritis
DMARD	–	disease-modifying anti-rheumatic drugs
EULAR	–	the European Alliance of Associations for Rheumatology
ESR	–	erytrocytes sedimentation rate
GC	–	glucocorticoids
GI	–	gastrointestinal
GRAPPA	–	the Group for Research and Assessment of Psoriasis and Psoriatic Arthritis
HIV	–	human immunodeficiency virus
HLA-B27	–	human leukocyte antigen of the major histocompatibility complex B-27
IBD	–	inflammatory bowel diseases
Ig	–	immunoglobulin
IL	–	interleukin
IL-17-i	–	interleukin-17 inhibitor
IL-23-i	–	interleukin-23 inhibitor
Il-12/IL-23-i	–	interleukin-12/ interleukin 23 inhibitor
JAK-i	–	Janus kinase inhibitor
LDI	–	Leeds dactylitis index

LEI	–	Leeds enthesitis index
MRI	–	magnetic resonance imaging
NPF	–	National Psoriasis Foundation
NSAID	–	non-steriod anti-inflammatory drug
PsA	–	psoriatic arthritis
ReA	–	reactive arthritis
SpA	–	spondyloarthritis
SPARCC	–	Spondyloarthritis Research Consortium of Canada
TNF-i	–	tumor necrosis factor inhibitors
tsDMARDs	–	targeted synthetic disease-modifying anti-rheumatic drugs
UC	–	ulcerative colitis
UG	–	urogenital
US	–	ultrasound examination

BASIC KNOWLEDGE, SKILLS, ATTAINMENTS NECESSARY FOR THE TOPIC STUDYING

Names of previous disciplines	Acquired skills
Foreign language	Be able to work with foreign literature to gain knowledge about modern methods of diagnosis and treatment of rheumatological diseases
Medical Informatics	To apply modern computer programs and be able to work with them, analyze the results of studies, be able to evaluate and interpret the results of clinical studies given in information sources, be able to work with electronic databases
Human anatomy. Normal physiology	To know the normal anatomy, structure and functions of the spine and joints. To understand and define the connection of structure and function of the musculoskeletal system with other organs and systems of the human body
Microbiology, Virology and Immunology	To analyze peculiarities of life activity of microorganisms, to know bases of antibiotic therapy. To understand the pathogenesis of human infectious diseases and their influence on the initiation of inflammatory/autoimmune processes with further development of rheumatic diseases
Pathomorphology. Pathophysiology	To know the typical pathological processes in the development of inflammation (including autoimmune), joint, cartilage and bone tissue destruction, impact of these changes on human's organs and systems, development of cause-and-effect relationships in the pathology of the whole organism. To describe and diagram the mechanism of development of typical pathological syndromes in rheumatological diseases, justify pathogenetic approaches to medical therapy
Pharmacology	Be able to navigate the nomenclature of medicines. To know the mechanism of drugs action, their pharmacodynamics, indications and contraindications for their use. To know the peculiarities of clinical pharmacology of drugs used in the treatment of rheumatological diseases, the peculiarities of the pharmacological action of these drugs in different categories of patients, namely, the use in clinical practice of disease-modifying synthetic antirheumatic drugs, disease-modifying biological antirheumatic drugs and biosimilars

Pharmacology	To make an informed choice of individual drugs and therapy regimens, taking into account the principles of evidence-based medicine, optimisation of treatment regimens, to assess the effectiveness and safety of pharmacotherapy, taking into account the individual characteristics of the patient, the presence of concomitant diseases
Propedeutics of internal medicine	To conduct physical examination of rheumatological patients according to the recommended scheme with appropriate examination of the musculoskeletal system. To identify leading syndromes and symptoms in rheumatological diseases. To analyze the results of the main laboratory and instrumental investigations. Based on the anamnesis, physical examination of rheumatological patients and the additional investigations, to conduct differential diagnosis, to justify and to formulate clinical diagnosis

The student must know:

- spine and joints anatomy and functions;
- mechanisms of the spine, sacroiliac joints and other joints injury, including autoimmune;
- main risk factors and etiological factors, pathogenesis, clinic, differential diagnosis of reactive and psoriatic arthritis;
- classification of rheumatic diseases, according to the international guidelines;
- the basic standards of instrumental and laboratory investigations, used for the examination of patients with reactive and psoriatic arthritis;
- standards of diagnosis (diagnostic criteria) of reactive and psoriatic arthritis in accordance with international guidelines;
- modern international standards and guidelines for the treatment of reactive and psoriatic arthritis;
- possible prevention of reactive and psoriatic arthritis;
- rehabilitation methods of preservation and improvement of quality of life of patients with reactive and psoriatic arthritis.

Student must be able to:

- collect complaints, anamnesis;
- to conduct objective examination of a patient with reactive and psoriatic arthritis, according to the recommended scheme with appropriate examination of the musculoskeletal system (spine, sacroiliac joints, peripheral joints);
- to assess data of instrumental and laboratory investigations in reactive and psoriatic arthritis;
- to diagnose the disease in a patient with reactive and psoriatic arthritis, using diagnostic criteria;
- to perform differential diagnosis of reactive and psoriatic arthritis;
- on the basis of complaints, anamnesis, objective examination of the patient, instrumental and laboratory investigations, using diagnostic criteria, to make clinical diagnosis for a patient with reactive and psoriatic arthritis;
- to prescribe treatment according to the modern international standards and guidelines for treatment of reactive and psoriatic arthritis;
- to recommend rehabilitation methods of preservation and improvement of quality of life for a patient with reactive and psoriatic arthritis.

2. TOPIC CONTENT

2.1. Reactive arthritis - definition

Reactive arthritis (ReA) is an autoimmune disease that develops 2-4 weeks after a urogenital (UG) or gastrointestinal (GI) infection. The association of ReA with UG infection caused by Shigella dysenteriae/Shigella flexneri, Salmonella typhimurium, Yersinia enterocolitica and Campylobacter jejini, as well as with UG infection caused by Chlamydia trachomatis has been proven. There is evidence of cases of ReA after COVID-19.

2.1.1. General information about a patient with reactive arthritis

ReA was described by the German physician Hans Reiter in 1916, and for some time the disease was called by his name - Reiter's syndrome. In the modern classification of diseases, this name is no longer used because of Reiter's activities as a Nazi war criminal, as well as because Reiter was not the first to describe ReA, and the pathogenesis of this nosology was described incorrectly.

There is insufficient data on the incidence and prevalence of ReA; the incidence of the disease is estimated at 3.5-5 cases per 100,000 people.

Currently, the term ReA includes the old concepts of complete and incomplete ReA and a clinical syndrome of arthritis with or without extra-articular manifestations that develops on average one month after an infectious diarrhoea (post-enterocolitis ReA) or a UG infection (UG ReA).

ReA is most common in young men with a peak incidence in the third decade of life. UG ReA is most common in male patients. Post-enterocolitic ReA is equally common in men and women.

RA is often associated with the human leukocyte antigen of the major histocompatibility complex B-27 (HLA-B27) haplotype and is classified as a seronegative spondyloarthritis (SpA). Seronegative SpA group includes undifferentiated peripheral SpA; axial SpA (AxSpA): radiological - ankylosing spondylitis (AS) and non-radiological; juvenile spondylitis; psoriatic arthritis (PsA); arthritis associated with inflammatory bowel disease (IBD): ulcerative colitis (UC) and Crohn's disease (CD). As with other SpA, HLA-B27-associated ReA is more common in white people than in black people.

ReA has a high relapse rate (15-50% of cases), especially in patients who are positive for HLA-B27. Reinfection can cause a relapse of the disease.

Approximately 15-30% of patients with ReA develop long-term, sometimes destructive arthritis, or enthesitis, or spondylitis.

2.1.2. Algorithm of reactive arthritis diagnosis

The classical triade of ReA occurs in only one third of patients and consists of the following syndromes:

- non-infectious urethritis;
- arthritis;
- conjunctivitis.

In post-enterocolitis ReA, the clinical triad occurs in 2-4 weeks after the diarrhoeal syndrome (usually mild). In some clinical cases, there is a fourth syndrome - mucocutaneous manifestations, which can be considered as a diagnostic tetrade.

The onset of ReA is usually acute and is characterised by malaise, fatigue and fever. A common symptom is asymmetric oligoarthritis with predominantly lower limb involvement. Arthritis can be accompanied by myalgias, especially in the early stages of the disease. Asymmetric arthralgia and joint stiffness may occur, with involvement of knee, ankle and foot joints (less often, the wrist joints are involved). Pain in the lumbar spine occurs in 50% of patients. Pain in the calcaneus is often associated with Achilles tendon enthesopathy and plantar fasciitis.

Both UG and post-enterocolitic forms of ReA may present at the beginning with urethritis with frequent urination, dysuria, urgency to urinate and urethral discharge. Urethritis may be mild or asymptomatic. UG symptoms, whether due to UG or GI infection, are present in 90% of patients with ReA.

Ophthalmological symptoms, in addition to conjunctivitis, may include scleral injection, eye burning, lacrimation, photophobia, pain during eyeball movement, and visual loss (rarely).

In post-enterocolitis ReA, a mild recurrent abdominal syndrome may be observed, most often after a bout of diarrhoea.

ReA is often associated with infection caused by the human immunodeficiency virus (HIV). Therefore, all patients with newly diagnosed ReA should be tested for HIV.

Physical examination of patients with ReA includes examination of the musculoskeletal system, skin and nails, eyes, GI tract and other systems.

- Musculoskeletal system - asymmetric oligoarthritis mainly of the lower extremities (knees, ankles); “sausage-shaped” toes (dactylitis); enthesopathy (more often - achilles); sacroiliitis.
- Skin and nails - keratoderma blennorrhagica; erythema nodosum (rarely); onychodystrophy.
- Eyes - conjunctivitis; anterior uveitis; keratitis; scleritis; episcleritis; corneal ulcer; retinal vasculitis; optic neuritis; dacryoadenitis.
- UG system - clear mucous discharge; prostatitis; vulvovaginitis; circular balanitis (balanitis circinata); cervicitis; cystitis; salpingo-oophoritis; bartholinitis; pyelonephritis; rarely - amyloidosis and immunoglobulin A (IgA) nephropathy.
- GI tract - diarrhoea; abdominal pain; symptoms resembling IBD.
- Cardiovascular system - aortitis, aortic regurgitation, transient conduction disorders, myocarditis, pericarditis (rarely).

The diagnosis of ReA is made clinically, based on anamnesis and physical examination. The diagnostic criteria for ReA can be used. The presence of 2 or more of the following criteria, 1 of which must be related to the musculoskeletal system, allows the diagnosis of ReA to be made:

- Asymmetric oligoarthritis, mainly of the lower extremities.
- “Sausage-shaped” toes (dactylitis), or pain in the joints of the toes or heel bone, or other enthesitis.
- Cervicitis or acute diarrhoea within 1 month before the onset of arthritis.
- Conjunctivitis, or uveitis, or iridocyclitis.
- Genital ulcer or urethritis.

There are no specific laboratory and instrumental tests to confirm the diagnosis. The following laboratory tests are performed:

- Complete blood count - there may be a normocytic normochromic anaemia

with moderate leukocytosis (up to 20,000/μL) and thrombocytosis in the acute phase.

- Erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) - acute-phase values are usually elevated (e.g. ESR 50-60 mm/h), but later return to reference values when the acute phase of the disease resolves.
- IgA antibodies to specific bacterial antigens.
- Serological tests and cultures (blood, urine, faeces, urethral and vaginal swabs), especially if chlamydial infection is suspected.
- HLA-B27 test results are positive in 65-96% of cases of ReA. The presence of HLA-B27 correlates with AxSpA, carditis and uveitis, and therefore HLA-B27 testing is indicated in torpid forms of ReA and extra-articular manifestations.
- HIV testing is mandatory for patients newly diagnosed with ReA, even if they have no risk factors.
- Detection of SARS-CoV-2 (COVID-19) coronavirus infection.
- Urinalysis - leucocyturia, erythrocyturia, proteinuria and pyuria may be present.

If necessary, instrumental examinations are performed:

- X-ray of the peripheral joints and sacroiliac joints - periosteal reaction and proliferation at the tendon attachment sites are detected. X-ray findings of spinal lesions include sacroiliitis and syndesmophytes. Sacroiliitis (unilateral or bilateral) occurs in less than 10% of acute cases, but develops in half of patients with chronic severe disease. In the early stages of the disease, X-ray often shows no changes.
- Magnetic resonance imaging (MRI) of the sacroiliac joints can detect changes in the sacroiliac joints (sacroiliitis) earlier than conventional X-ray.
- Ultrasound examination (US) can detect enthesitis (periosteal reaction and tendinosis) more accurately and earlier than physical examination.

- Echocardiography, electrocardiography.

2.1.3. Basic principles of treatment of patients with reactive arthritis

Recommendations of the European Alliance of Associations for Rheumatology (EULAR) and American Collegium of Rheumatologists (ACR)

Treatment of ReA is aimed at relieving symptoms and depends on their severity. In almost 2/3 of patients, the disease resolves on its own without medication. In 30 % of patients, chronic symptoms develop, requiring drug therapy.

The following drugs are used to treat ReA:

- Non-steroidal anti-inflammatory drugs (NSAIDs) are the mainstay of ReA therapy.
- Glucocorticoids (GC) - intra-articular and/or systemical use. Injections into the joints (including the sacroiliac joints) can cause long-term symptomatic improvement and prevent the need for systemic GC therapy.

Systemic GC are indicated for patients who are not responding to NSAIDs or who experience side effects associated with NSAIDs. The initial dose is determined by the symptoms of the disease and the activity of the inflammation. Prednisone (or methylprednisone with appropriate dose recalculation) can be prescribed at a dose of 0.5-1 mg/kg/day with a gradual dose reduction depending on the effect obtained.

If the eyes are affected, GC can be prescribed topically in the form of gels and ointments.

- Antibiotics for UG (chlamydial) ReA are tetracyclines or macrolides. Antibiotic treatment is indicated for cervicitis or urethritis, but usually not for post-enterocolitic ReA. In some cases, long-term (up to 6 months) combined antibiotic therapy for chlamydial ReA can be an effective treatment strategy.
- In rare cases, in case of prolonged course or ineffectiveness of the above therapy, or in case of transformation of ReA into one of the variants of SpA,

disease-modifying antirheumatic drugs (DMARDs) are prescribed: synthetic (csDMARDs) - sulfasalazine, methotrexate, or biological (bDMARDs) - tumour necrosis factor inhibitors (TNF-i), for example, etanercept or infliximab.

In case of mucosal lesions, topical care is necessary. Topical steroids (e.g. hydrocortisone or triamcinolone) can be used for psoriasis-like skin lesions. If necessary, a topical keratolytic such as 10% salicylic acid ointment can be added.

Physiotherapy is recommended as non-pharmacological therapy to prevent amyotrophy and for pain relief. It is necessary to maintain joint function through physical activity (exercise therapy, yoga, etc.). No dietary restrictions are required if the patient is not receiving steroid therapy.

It has been shown that timely treatment of acute UG infection can prevent the development of UG (chlamydial) ReA, and adequate treatment of acute ReA with a 3-month course of antibiotics (tetracyclines and macrolides in monotherapy or in combination with rifampicin) can shorten the duration of the disease.

Providing information to patients about the prevention of the spread of UG diseases through condoms is associated with a reduction in the incidence of UG ReA.

2.2. Psoriatic arthritis - definition

PsA is an inflammatory form of arthritis associated with psoriasis, characterised by pain, stiffness and limited mobility of the affected joints. Additional complaints include heel or bottom of the foot tenderness, neck or lower back pain, hand and foot dactylitis, nail damage, and general fatigue..

2.2.1. General information about a patient with psoriatic arthritis

Approximately 25-30% of patients with skin psoriasis develop PsA. The skin lesions precede the onset of PsA by about 10 years, but in some cases, symptoms of arthritis appear simultaneously or before the onset of skin lesions.

The most important risk factors for developing PsA are a current or family history of plaque psoriasis and nail psoriasis, so these patients should undergo regular monitoring of joint pain, joint stiffness and signs of dactylitis for timely diagnosis of PsA.

It is estimated that worldwide PsA affects 0.05% to 0.25% of the population. It is more common in Caucasians and is equally prevalent in men and women.

PsA usually begins between the ages of 30 and 50. There is a genetic predisposition, with an inheritance rate in first-degree relatives ranging from 30% to 55%. The majority of patients with PsA have comorbidities: gouty arthritis, hypertension and other cardiovascular diseases, type 2 diabetes, obesity, hyperlipidaemia and hyperuricaemia.

Patients with PsA often suffer from depression. Healthcare professionals (primarily rheumatologists) should be aware of the symptoms of depression in patients with PsA, so they should refer the patient to a specialist or make sure that the patient is being treated in some way.

Left untreated, PsA leads to progressive and irreversible joint damage and increased mortality.

2.2.2. Psoriatic arthritis - diagnosis algorithm

The diagnosis of PsA is generally based on clinical examination and imaging to detect inflammation and joint damage, as there are no specific laboratory biomarkers to identify the disease.

As 75% of patients with PsA have already been diagnosed with plaque psoriasis, the clinician needs to be alert to symptoms of joint involvement in patients with plaque psoriasis. Patients with a joint syndrome but no overt skin disease should be carefully examined along the hairline, groin, ears, and

intergluteal cleft for signs of plaque psoriasis, which may appear concurrently with or after the onset of PsA in 25% of cases.

According to the clinical classification, there are five variants of joint involvement in PsA:

- asymmetrical oligoarticular arthritis, characterised by the involvement of four or fewer joints;
- symmetrical polyarthritis, characterised by the involvement of five or more joints;
- distal interphalangeal PsA, characterised by the involvement of the distal interphalangeal joints of the hands and feet;
- arthritis mutilans, with severe osteolysis, characterised by telescopic and soft fingers;
- spondylitis, characterised by spinal damage (with inflammatory back pain) and sacroiliac joint.

PsA in different patients is distinguished by a variety of clinical presentations. One joint (monoarticular), four or fewer joints (oligoarticular) or five or more joints (polyarticular) may be affected, with different manifestations in terms of symmetry and other features. In addition to skin lesions, PsA may also involve nail lesions (nail psoriasis), eye lesions (most commonly uveitis), and IBD - UC and CD.

Physical examination reveals typical dermatological signs of psoriasis, such as scaly erythematous plaques on the skin, nail psoriasis, enthesitis (most often at the site of attachment of the Achilles tendon and plantar fascia to the calcaneus), dactylitis, and extra-articular signs such as eye lesions, namely conjunctivitis or uveitis.

The **G**roup for **R**esearch and **A**ssessment of **P**soriasis and **P**s**A** (GRAPPA) lists six organs of involvement (domains) that are important for the evaluation of patients with suspected PsA. They are nail psoriasis, peripheral joint disease, axial disease, enthesitis, dactylitis, and skin. Patients with PsA

may have different domains or combinations of domains. Extra-articular manifestations include dermatological symptoms, nail, eye diseases and IBD.

In patients with plaque psoriasis, the severity of skin symptoms can be assessed using the Psoriasis Area and Severity Index. The severity of skin symptoms does not correlate with the severity of joint manifestations of PsA. On the contrary, the severity of nail symptoms correlates with the severity of the joint syndrome. Ocular symptoms in patients with PsA can be chronic and bilateral.

Enthesitis is an inflammation of the areas of tendon and ligament attachment to the bone, often preceding the development of PsA. Enthesitis occurs in 30-50% of patients with PsA. It most commonly affects the lower extremities, plantar fascia and Achilles tendon, as well as the area around the knee joint, thigh, epicondyles and musculus supraspinatus.

The presence and degree of enthesitis is assessed using enthesitis indices: the **L**eeds **E**nthesitis **I**ndex (LEI) or **SP**ondylo**A**rthritis **R**esearch **C**onsortium of **C**anada (SPARCC) Enthesitis Index. The LEI gives a score of 0-6 based on the involvement of three bilateral sites (elbows, knees and heels).

Dactylitis occurs in 40-50% of patients with PsA and is manifested by severe swelling of the tissues of the fingers or toes. Dactylitis is a characteristic feature of PsA and clinically looks like so-called “sausage-shaped” fingers or toes. In many patients, PsA debuts with dactylitis and may be the only sign of PsA for many years after the onset of the disease. Acute dactylitis is clinically manifested by swelling, erythema and pain, and may resolve on its own, leaving the joint swollen but without pain. Chronic dactylitis is characterised by swelling without inflammation or pain.

In PsA, dactylitis is usually asymmetrical, affecting more toes than fingers. If present on the hands, dactylitis tends to affect the index finger of the “working” hand.

Dactylitis is diagnosed when there is damage (palpable tenderness and swelling) to all three (two for thumbs) joints of one finger or toe. The extent of the disease can be assessed by counting the fingers with dactylitis or the **L**eeds **D**actylitis **I**ndex (LDI) - the circumference of the affected joints is measured and compared with the circumference of the same joints on the opposite hand or foot. A minimum difference of 10% is used to indicate that the affected finger has dactylitis.

The **C**l**AS**sification criteria for **P**s**AR**thritis - **CASPAR** include the following:

- Current psoriasis (2 points).
- History of psoriasis (in the absence of current psoriasis - 1 point).
- Hereditary history of psoriasis (in the absence of current psoriasis and history of psoriasis - 1 point).
- Dactylitis (1 point).
- Periarticular formation of new bone according to joint X-ray (1 point).
- Negative rheumatoid factor (1 point).
- Nail dystrophy (1 point)

A score of ≥ 3 defines PsA.

Criteria for severe PsA include 1 or more of the following:

- Erosive arthritis according to joint X-ray.
- PsA-induced increase in markers of inflammation activity (ESR, CRP).
- Deformation of joints with impaired function.
- Active PsA, which significantly affects the patient's quality of life.
- Multiple clinical manifestations of PsA (dactylitis, enthesitis, eye lesions).
- Impaired function of organs affected in patient with PsA.
- Rapidly progressive course of PsA.

PsA activity is assessed using the **D**isease **A**ctivity in **PsA** Score (**DAPSA**). DAPSA assesses joint tenderness (number of joints 0-68), joint

swelling (number of joints 0-66), CRP, and patient answers for disease activity (0-10) and pain (0-10) on a 10-point scale. The total score corresponds to disease activity: 0-4 means remission, 5-14 means low disease activity, 15-28 means moderate disease activity and > 28 means high disease activity. The DAPSA index is used to assess the response to treatment and disease activity in patients with PsA.

In some cases, a differential diagnosis with rheumatoid arthritis, ReA, AS, gouty arthritis, and osteoarthritis is required to confirm the diagnosis of PsA.

The following laboratory and instrumental tests are performed to confirm the diagnosis of PsA.

Laboratory tests:

- Complete blood count - normocytic normochromic anaemia can be present.
- ESR and CRP are usually elevated.
- HLA-B27 is positive in 70-90% of PsA cases.
- RF and antinuclear antibodies are negative.
- Serum uric acid may be elevated.

Instrumental investigations:

- X-ray of the spine, sacroiliac joints and peripheral joints - changes in the joints resembling a “pencil in a cup” are detected (these changes are caused by periarticular erosion and bone resorption); narrowing of the joint space in the interphalangeal joints; spindle-shaped soft tissue edema; sacroiliitis and/or unilateral, asymmetric syndesmophytes (intervertebral bone bridges) in the cervical, thoracic and lumbar spine.
- MRI of the sacroiliac joints and spine - detects early active inflammatory lesions (e.g., bone marrow edema) and structural lesions (e.g., bone erosion, new bone formation, sclerosis) compared to X-ray.
- US of the joints - synovial thickening, tendynitis, periosteal reaction (enthesitis), erosion and synovial hypervascularisation are detected.

2.2.3. Basic principles of treatment of patients with psoriatic arthritis

Recommendations of ACR/the National Psoriasis Foundation (NPF), EULAR and GRAPPA

Treatment of PsA is aimed at relieving symptoms, minimising irreversible joint damage and reducing disease activity. Factors that should be considered when making treatment decisions include the severity of the disease, the degree of joint destruction, extra-articular manifestations of PsA, the presence of comorbidities, and the patient's opinion. Patients, with assistance of the doctor should be provided with up-to-date, available information about appropriate treatment options for PsA to facilitate treatment decision-making and adherence. Patients with PsA should be evaluated regularly and as needed to assess the effectiveness of treatment and side effects.

Regardless of the pharmacological treatment chosen, patients should be encouraged to use non-pharmacological treatment whenever possible. Non-pharmacological treatment includes physical therapy, occupational therapy, mild exercise, weight management for overweight and obese patients, massage and acupuncture. Smoking cessation is strongly recommended.

In 2019, ACR and NPF published guidelines for the treatment of PsA. These recommendations are consistent with the EULAR 2019 guidelines and the more recent GRAPPA 2021 guidelines:

- Pain relief (symptomatic treatments):
    - NSAIDs (naproxen, diclofenac, indomethacin);
    - GC - topical, intra-articular and systemic.
- csDMARDs are recommended for patients with mild PsA or severe PsA who have contraindications to TNF-i therapy. These drugs can also be prescribed to patients who do not want to take parenteral treatment or have concerns about the side effects of biologic therapy:
    - Methotrexate;
    - Leflunomide;

- Sulfasalazine.

- bDMARDs:
  - TNF-i: subcutaneously - adalimumab, certolizumab pegol, etanercept, golimumab, intravenously - infliximab. It is recommended for patients who have not previously received TNF-i, as well as for patients with no effect from csDMARDs, such as methotrexate. If there is no effect from the first TNF-i, another TNF-i should be considered. Contraindications to TNF-i prescription include congestive heart failure, previous serious infectious diseases, recurrent infections while taking TNF-i, and demyelinating disease;
  - interleukin (IL)-12/IL-23 inhibitors (IL-12/23-i): subcutaneously ustekinumab (IL-12/23-i) is recommended for patients with IBD with cutaneous psoriasis and/or PsA, guselkumab (the first selective IL-23-i) is recommended for the treatment of PsA, rituximab (IL-23-i) is recommended for the treatment of active and moderate PsA and severe plaque psoriasis. Also, IL-12/IL-23-i is recommended for patients with ineffective previous TNF-i treatment, contraindications to TNF-i treatment, and in case of adverse events while TNF-i treatment.
- Targeted synthetic disease-modifying anti-rheumatic drugs (tsDMARDs):
  - Janus kinase inhibitors (JAK-i): oral tofacitinib is prescribed to patients with ineffective previous TNF-i treatment, in case of adverse events while TNF-i treatment and in patients with recurrent candidal infection.
- Phosphodiesterase 4 inhibitor: oral apremilast.
- Abatacept, IgG antibody, related to a cytotoxic T-lymphocyte of the protein 4, is recommended for patients with ineffective treatment of TNF-i or the presence of their side effects.

In general, EULAR 2019 recommendations for the algorithm of pharmacological treatment of PsA are as follows:

1. Treatment goal: remission or low disease activity.
2. Signs and symptoms of the musculoskeletal system: NSAIDs.
3. Additional therapy:
   - Topical administration of GC.
   - Systemic GC in the lowest effective dose and with caution.
4. Polyarthritis:
   - Prescribe csDMARDs as early as possible;
   - In case of skin lesions, methotrexate is preferable.
5. Monoarthritis or oligoarthritis, especially with structural damage, high ESR or CRP levels, dactylitis, nail lesions or other unfavourable prognostic factors - prescribe csDMARDs as early as possible.
6. Peripheral arthritis and inadequate response to one or more csDMARDs:
   - Start therapy with bDMARDs;
   - IL-17-i or IL-12/23-i are the drugs of choice for skin lesions.
7. Peripheral arthritis and inadequate response to one or more csDMARDs, or one or more bDMARDs, or bDMARDs are not suitable - JAK-i is a drug of choice.
8. Mild PsA and inadequate response to one or more csDMARDs and, when bDMARDs and JAK-i are not suitable, a phosphodiesterase 4 inhibitor is the drug of choice.
9. Enthesitis and inadequate response to local injections of NSAIDs or GC - bDMARDs are recommended.
10. Preferably axial active disease with inadequate response to NSAIDs:
    - Prescribe bDMARDs, TNF-i is a drug of choice.
    - IL-17-i is a drug of choice for skin lesions.
11. Inadequate response or intolerance to bDMARDs:
    - Prescribe another bDMARD.
    - Prescribe tsDMARDs.
    - Consider switching (drug replacement) within the class.

12. Sustained remission - consider careful DMARDs dose reduction.

Vaccination of patients with SpA during therapy

It is advisable to complete vaccination of patients before starting TNF-i therapy. Clinicians should consider administering hepatitis B, hepatitis A, influenza, 23-valent pneumococcal polysaccharide vaccine, herpes zoster vaccine, and human papillomavirus vaccine (if appropriate) to patients with SpA. Patients may also need a tetanus booster. Live attenuated vaccines should be avoided whenever possible when treating patients with bDMARDs.

Examples of the diagnosis

1. Urogenital (chlamydial) reactive arthritis: oligoarthritis of the right ankle and left knee joints; synovitis of the left knee joint, stage of exacerbation. Hyperkeratosis of the feet.
2. Psoriatic spondyloarthritis, seronegative for HLA B-27, high degree of activity (ASDAS - 5.9), with involvement to the right sacroiliac joint - right sacroiliitis (D - Rö III stage), knee and ankle joints. Psoriasis with the scalp lesion. Psoriatic onychodystrophy.

TEST TASKS FOR SELF-CONTROL

1. Etiotropic therapy of reactive arthritis is carried out with the following antibacterial drugs:
   A. Aminoglycosides;
   B. Penicillins;
   C. Cefalosporins;
   D. All of the above;
   E. None of the above.

2. The leading mechanism in the pathogenesis of reactive arthritis is:
   A. Violation of purine metabolism;
   B. Chlamydia infection;
   C. Autoimmune inflammation in the joints;
   D. Cartilage degeneration;
   E. Previous joint injury.

3. What extra-articular manifestations are typical in psoriatic arthritis?

A. Dactylitis;
B. Uveitis;
C. Enthesitis;
D. All of the above;
E. None of the above.

4. Which of the following microorganisms is not an etiological factor of reactive arthritis?
A. Chlamydia trachomatis;
B. Salmonella typhimurium;
C. Escherichia coli;
D. Campylobacter jejini;
E. Yersinia enterocolitica.

5. "Sausage-like" toes defiguration is a sign of:
A. Dactylitis;
B. Osteoporosis;
C. Enthesitis;
D. Osteoarthritis;
E. Synovitis.

6. Dactylitis is:
A. Nail lesion;
B. Swelling of all joints of one finger;
C. Soreness of all joints of one finger;
D. Swelling and soreness of all joints of one finger;
E. Skin lesion in the finger area.

7. Which of the following is not used in the treatment of psoriatic arthritis?
A. TNF inhibitor;
B. IL-6 inhibitor;
C. IL-17 inhibitor;
D. IL-23 inhibitor;
E. JAK inhibitor.

8. What is included in the reactive arthritis triade?
A. Non-infectious urethritis;
B. Arthritis;
C. Conjunctivitis;
D. All of the above;
E. None of the above

9. What criterion is not included in the diagnostic criteria of psoriatic arthritis - CASPAR?
   A. Current psoriasis;
   B. History of psoriasis;
   C. Positive rheumatoid factor;
   D. Dactylitis;
   E. Nail dystrophy.

10. What laboratory tests are used to confirm the diagnosis of psoriatic arthritis?
   A. Rheumatoid factor;
   B. Antinuclear antibodies;
   C. Native DNA antibodies;
   D. All of the above;
   E. None of the above.

KEYS

1. – E; 2. – B; 3. – D; 4. – C; 5. – A; 6. – D; 7. – B; 8. – D; 9. – C; 10. – E.

SITUATIONAL TASKS

1. A 36-year-old man with psoriasis for 12 years developed pain, swelling, morning stiffness in the joints of the hands and feet. Blood tests: ESR - 48 mm/h. What diagnostic criterion confirms the diagnosis of psoriatic arthritis?
   A. Proximal interphalangeal joint involvement;
   B. Dactylitis;
   C. Symmetrical joint damage;
   D. Positive rheumatoid factor;
   E. The presence of osteophites.

2. A 25-year-old patient complains of pain in the right ankle and left knee joint. During a week he was treated by a urologist for urethritis, then for another 3 days by an ophthalmologist for conjunctivitis. What is the main diagnostic sign for this condition:
   A. "Sausage-like" defiguration of the toes;
   B. Sacroiliitis;
   C. Negative rheumatoid factor;
   D. Nail lesion;
   E. HLA-B27 positivity.

3. A 32-year-old patient has been experiencing burning sensation in the urethra for a month, which intensifies during urination. After playing football, he developed sharp pain in the Achilles tendon and in the right knee joint, swelling,

and subfebrile body temperature. CBC: ESR - 32 mm/h, L - 11.9×10^9/l. What is the patient's diagnosis?

A. Traumatic arthritis;
B. Tuberculosis gonitis;
C. Rheumatic arthritis of the knee joint;
D. Reactive arthritis;
E. Rheumatoid arthritis.

4. A 20-year-old patient complains of pain in the toes, cannot stand on the right heel because of pain, subfebrile temperature. The disease started 6 weeks before, when pain during urination and conjunctivitis appeared. Two months ago he had casual sexual intercourse. Blood test: leukocytes - 8.0×10^9/l, ESR - 41 mm/h, RF - negative. An X-ray of the feet shows signs of heel spurs. What examination should be prescribed to the patient to confirm the diagnosis?

A. PCR test for chlamydia;
B. Blood test for antinuclear antibodies;
C. Blood test for uric acid;
D. Blood test for antinuclear cytoplasmic antibodies;
E. Blood test for anti-cytoplasmic antibodies.

5. A 42-year-old patient developed pain and swelling of the distal joints of the fingers and toes; night pain in the lower back. During the examination, psoriatic plaques were found on the skin of the trunk. Laboratory tests: ESR 36 mm/h, RF - negative. X-ray - signs of unilateral sacroiliitis. What is the patient's diagnosis?

A. Rheumatoid arthritis;
B. Reactive arthritis;
C. Psoriatic arthritis;
D. Gouty arthritis;
E. Osteoarthritis.

KEYS

1. – B; 2. – E; 3. – D; 4. – A; 5. – C.

RECOMMENDED LITERATURE

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Електронне навчальне видання комбінованого використання
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ВЕДЕННЯ ПАЦІЄНТА З БОЛЕМ У СПИНІ (СПОНДИЛОАРТРИТИ)

У двох частинах

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для підготовки здобувачів вищої освіти 6-го року навчання
з дисципліни «Внутрішня медицина»

(Англ. мовою)

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