MINISTRY OF HEALTH OF UKRAINE

ODESA NATIONAL MEDICAL UNIVERSITY

Departments of Pediatrics №2

CONFIRMED by

Vice-rector for research and educational work

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METHODOLOGICAL RECOMMENDATIONS ON PRACTICAL CLASSES FOR STUDENTS

International Medical Faculty, course 6

Educational discipline "**PEDIATRICS**"

Approved
at the meeting of the department of Pediatrics №2
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1. **Topic** № 18.
   Differential diagnosis of systemic connective tissue diseases and systemic vasculitis in children. Leading clinical symptoms and syndromes in juvenile idiopathic arthritis, systemic lupus erythematosus, acute rheumatic fever, dermatomyositis, scleroderma, Kawasaki disease, polyarteritis nodosa and other systemic vasculitis in children. Clinical variants of the course and complications of systemic connective tissue diseases and systemic vasculitis in children. Data of laboratory and instrumental studies in systemic connective tissue diseases and systemic vasculitis in children. Differential diagnosis of systemic connective tissue diseases and systemic vasculitis in children. Differential diagnosis of arthritis in children. Tactics of managing patients with systemic connective tissue diseases and systemic vasculitis in children. Primary and secondary prevention of acute rheumatic fever in children. Medical supervision.
2. **Background**

Diffuse connective tissue diseases (CTD) are a group of diseases with an unknown etiology and complex autoimmune pathogenesis of development, in which connective tissue is affected, which is the most important structural and functional component of almost all organs and tissues. Systemic vasculitis is a group of vasculitis with an unknown etiology and complex autoimmune pathogenesis of development, which affects the vessels of various organs and systems, which is the most important component of almost all organs and tissues. The multiorgan nature of clinical manifestations, early disability of sick children, the probability of death in untimely diagnosis and late therapy determine the relevance of the study of this topic.this disease in children age.

3. ***Purpose of the lesson***

3.1. General purpose

Get acquainted with the modern definition of systemic connective tissue diseases (systemic lupus erythematosus, systemic scleroderma, dermatomyositis), juvenile idiopathic arthritis, reactive arthritis, systemic vasculitis (nodular polyarteritis, etc.).

3.2. Educational goals

Demonstrate mastery of moral and deontological principles of a medical specialist and the principles of professional subordination in pediatric cardiorheumatology.

3.3. Specific objective to know

*Students need to know, master**:***

1. Determination of diffuse connective tissue diseases (systemic lupus erythematosus, systemic scleroderma, dermatomyositis) and systemic vasculitis.
2. Etiology of diffuse connective tissue diseases (systemic lupus erythematosus, systemic scleroderma, dermatomyositis) and systemic vasculitis.
3. Pathogenesis of diffuse connective tissue diseases (systemic lupus erythematosus, systemic scleroderma, dermatomyositis) and systemic vasculitis.
4. Classification of diffuse connective tissue diseases (systemic lupus erythematosus, systemic scleroderma, dermatomyositis) and systemic vasculitis.
5. Therapeutic tactics for diffuse connective tissue diseases.
6. Scheme of medical examination of a patient with CTD, systemic vasculitis.

3.4. On the basis of theoretical knowledge on the topic: to be able to:

1. Examine patients and identify the main syndrome in diffuse connective tissue diseases (systemic lupus erythematosus, systemic scleroderma, dermatomyositis) and systemic vasculitis.
2. Make a plan for examination of the patient, evaluate the data of laboratory and instrumental studies
3. Carry out differential diagnosis of fever of unclear genesis and non-infectious rash, diffuse connective tissue diseases (systemic lupus erythematosus, systemic scleroderma, dermatomyositis), and systemic vasculitis.

4. Preliminary diagnosis of diffuse connective tissue diseases (systemic lupus erythematosus, systemic scleroderma, dermatomyositis) and systemic vasculitis.
5. Clarify the etiological factor and explain the main pathogenetic mechanisms of diffuse connective tissue diseases (systemic lupus erythematosus, systemic scleroderma, dermatomyositis) and systemic vasculitis.
6. To determine treatment tactics for CTD.
7. Choose a rational scheme of medical examination of a patient with systemic vasculitis, and determine the prognosis

4. Materials extracurricular self-study (interdisciplinary integration).

№	Discipline	*Know*	Be able to
1	2	3	4
	Previous disciplines 1. Pat. Anatomy	Morphological changes of the CTD, connective tissue and articular system.	Use knowledge of morphology for diagnosis.
	2. Pat. Physiology	Pathogenesis of disease	Use knowledge of pathogenesis for the purpose of therapy.
	3. Histology	The building wall of the CVS, connective tissue and articular system in children of all ages.	Use knowledge to explain the clinical disease.
	4. Propadeutics Pediatrics.	Semiotics of pathology of the CVS, connective tissue and articular systems.	Possess the methods of inspection of cardiovascular system, CNS and the joints in children.Rate the additional methods. Select the main pathological symptoms(syndromes)
2.	Next disciplines 1. Hospital Pediatrics	Etio-pathogenesis, main clinical forms, principles of treatment and prevention of juvenile rheumatoid arthritis in children.	Examine patients, prescribe treatment, prevention, conduct differential diagnosis with major clinical forms.
	2. Hospital Therapy	Inflammatory and non inflammatory heart diseases. Rheumatic fever in adults.	Examine, treat and prevent.
3.	Interdisciplinary integration	Reactive arthritis, Inflammatory and non inflammatory heart diseases.	To make differentiate diagnosis

5.Contents of theme:

Juvenile rheumatoid arthritis (JRA) is the most common form of childhood arthritis. The cause remains unknown. For most patients, the immunogenic associations, clinical pattern, and functional outcome are different from adult onset RA.

The diagnostic criteria for JRA are onset occurring when younger than 16 years, persistent arthritis in 1 or more joints for at least 6 weeks, and exclusion of other types of childhood arthritis. The key points that characterize the diagnosis of JRA are as follows:

- Arthritis must be present. Arthritis is defined as the presence of swelling, the presence of effusion, or the presence of 2 or more of the following signs: limited range of motion (ROM), tenderness, pain on motion, or joint warmth.
- Arthritis must persist for at least 6 weeks.
- Other causes of chronic arthritis in children must be ruled out.
- No specific laboratory or other test can establish the diagnosis of JRA.

Pathophysiology

The diagnosis of rheumatoid arthritis (RA) must be considered in any patient with polyarticular inflammatory arthritis, especially if both the hands and feet are involved. The early phase of the disease is characterized by the following features:

- Joint swelling that may affect joint margins
- Joint tenderness upon palpation
- Systemic malaise
- Loss of energy
- Severe morning stiffness that limits function and generally lasts more than an hour

A classic feature of the illness is the symmetry of involvement. If synovial-based inflammation persists over time, permanent damage to tendons, ligaments, and cartilage occurs, as does subchondral bone destruction, with resultant joint deformity and limited motion. Inflammation and deformity are nearly always seen in the hands and feet (see the images below). However, involvement of the knees, hips, and shoulders accounts for significant morbidity that leads to work disability in a large percentage of patients.[2]

A major difference in the pathophysiology of RA versus osteoarthritis or mechanical joint problems is the presence of extensive synovial inflammation. The characteristic signs of inflammation were stated by Celsus as "rubor et tumor cum calore et dolore," meaning redness and swelling with heat and pain. Galen later added "et functio laesa" (disturbed function) to the characteristic signs of inflammation. Joint tenderness, swelling, stiffness, and pain on motion are the features of inflammation experienced by patients with RA.

Clinical

Stiffness of the joints is a major symptom in any type of arthritis and particularly in rheumatoid arthritis (RA). Frequently, RA is accompanied by "morning stiffness." Other inflammatory conditions, such as polymyalgia rheumatic and ankylosing spondylitis, also may be accompanied by morning stiffness. The severity of stiffness may better differentiate a primary inflammatory process from other joint processes. Edema of the synovial and periarticular structures contributes to stiffness in RA by mechanically interfering with the usual biomechanics of the joint. With normal sleep patterns, stiffness is most pronounced in the morning, in part due to redistribution of interstitial fluid while sleeping.

Pain is a significant problem for most patients with RA. Although the assessment is subjective, the patient's relief from pain is the objective for treatment. Swollen joints with an applied load or joints with rapidly evolving effusions may be extremely painful due to high intra-articular pressures that lead to excessive stresses on the extensively innervated peri-articular supporting structures.

Fingers

The boutonniere deformity, describes non reducible flexion at the proximal interphalangeal (PIP) joint along with hyperextension of the distal interphalangeal (DIP) joint of the finger. This deformity occurs as a result of synovitis stretching or rupturing of the PIP joint through the central extensor tendon with concomitant volar displacement of the lateral bands. When the lateral bands have subluxed far enough to pass the transverse axis of the joint, they become flexors of the PIP

joint. Hyperextension of the DIP joint occurs as the tendons shorten with time. A compensatory and reducible hyperextension may occur at the metacarpophalangeal (MCP) joint. Consequences of boutonniere deformity are loss of thumb mobility and pincher grasp.

Swan-neck deformity of the finger describes hyperextension at the PIP joint with flexion of the DIP joint. The deformity may be initiated by (1) disruption of the extensor tendon at the DIP joint with secondary shortening of the central extensor tendon and hyperextension of the PIP joint or (2) volar herniation of the PIP joint capsule due to weakening from chronic synovitis with subsequent tightening of the lateral bands and central extensor tendon. The lateral bands may become shortened over time and lie dorsally, limiting PIP flexion and ineffectively extending the DIP joint.

Tightness of intrinsic muscles (eg, interossei, lumbricals) may cause major declines in mobility of the fingers. This characteristic is ascertained on examination when the PIP joint cannot be flexed while the MCP joint is fully extended but can be flexed if the MCP is in flexion (Bunnell test); primary PIP joint pathology would be evident with the MCP joint in either position. To assess this accurately, the phalanx must be aligned with the metacarpal since the intrinsics on the ulnar side are slack when ulnar deviation at the MCP joint exists, thus allowing more motion.

Flexor tenosynovitis of the fingers is common and suggests a poor prognosis. Tenosynovitis is defined as inflammation of the tendon and its enveloping tendon sheath. "Triggering" of the finger occurs when thickening or nodule formation of the tendon interacts with the concomitant tenosynovial proliferation, trapping the tendon in a flexed position (stenosing tenosynovitis). Tendon rupture may occur due to infiltrative synovitis in the digit or bony erosion of the tendon at the wrist (especially the flexor pollicis longus).

Arthritis mutilans (ie, opera glass hands) results if destruction is severe and extensive, with dissolution of bone. In the small joints of the hands, the phalanges may shorten and the joints may become grossly unstable. Pulling on the fingers during examination may lengthen the digit much like opening opera glasses, or the joint may bend in unusual directions merely under the pull of gravity.

Metacarpophalangeal joints

Seen in the image below, 2 typical deformities that alter the alignment of the palmar skeletal arches and the stability of the fingers may occur at the MCP joints: volar subluxation and ulnar deviation. Most cases of ulnar deviation are accompanied by counterpoised radial deviation of the wrist, roughly proportional to the degree of ulnar deviation of the fingers. The volar plate is firmer and more substantial than other portions of the MCP joint capsule and, therefore, effectively limits extension and dorsal movement at the joint. The greater relative strength of the flexor muscles as compared with the extensor muscles causes volar migration of the proximal phalanx after synovial-based inflammation has weakened ligament and tendon insertions about the MCP joint capsule.

Ulnar deviation occurs after synovitis has led to stretching and attenuation of the volar plate and collateral ligaments, allowing dislocation of the flexor tendon volarward and ulnarward. The supporting structures of the extensor tendons also may become attenuated or destroyed by synovial distension and invasion, loosening the tendons so that they no longer ride centrally and dorsally over the metacarpal head but move into the cleft between the MCP joints. If the extensor tendon subluxation is beyond the transverse axis of the MCP joint, the tendon becomes a flexor at that joint, further limiting the active extension of the fingers.

Wrists

Multiple deformities may occur in the wrist. Disruption of the radioulnar joint with dorsal subluxation of the ulna (caput ulna), as well as rotation of the carpus on the distal radius with an ulnarly translocated lunate, is common. The combination of an ulnar drift of the fingers and carpal rotation is known as a zigzag deformity. Shortening of the carpal height (noted on radiographs), due in part to cartilage loss, is seen with rotational deformities.

Dorsal subluxation of the ulna often allows the ulnar styloid to be depressed volarly on examination, much like depressing a piano key. Subluxation may lead to rupture of the extensor tendons of the little, ring, and long fingers, because the end of the distal ulna is roughened

secondary to erosion of bone and may abrade the tendons as they move back and forth during normal hand function, much like a rope being frayed while rubbing over a sharp rock. This process is especially likely to lead to tendon rupture if there is associated tenosynovitis.

Elbow

Elbow involvement often is detected by palpable synovial proliferation at the radiohumeral joint and commonly is accompanied by a flexion deformity, such as in contractures. Olecranon bursal involvement is common, as are rheumatoid nodules in the bursa and along the extensor surface of the ulna.

Shoulders

Rheumatoid arthritis (RA) commonly involves the shoulders. RA in the shoulders is manifested by tenderness, nocturnal pain, and limited motion. Initially, swelling occurs anteriorly, but it may be difficult to detect and is present on examination in a minority of patients at any point in time. Rotator cuff degeneration secondary to synovitis may limit abduction and rotation. Superolateral migration of the humerus occurs with complete tears. Glenohumeral damage leads to pain with motion and at rest and typically leads to severely restricted motion or "frozen shoulder syndrome." Acromioclavicular arthritis is not as frequent or as disabling.

Feet and ankles

The ankle joint itself is rarely involved without midfoot or metatarsophalangeal (MTP) involvement. The ankle does not often deform, as it is a mortise joint. Major structural changes occur in the midfoot and foot due to the combination of chronic synovitis and weight bearing. Posterior tibialis tendon involvement or rupture may lead to subtalar subluxation, which results in eversion and migration of the talus laterally. Midfoot disease leads to loss of normal arch contour with flattening of the feet.

The MTP joints are inflamed in most patients and, due to the heavy loads they bear, commonly become deformed over time. The great toe typically develops hallux valgus (a bunion); subluxation of the phalanx at the MTP joint of the other toes predominantly occurs dorsally. The toes may exhibit compensatory flexion due to a fixed length of the flexor tendons, thus resulting in "hammer toes" (thought to look like piano hammers). The second and third metatarsal heads commonly protrude and may become the primary weight-bearing surface at the MTP joints. Calluses and pain upon weight bearing result.

Knees

Knees may develop large effusions and abundant accumulation of synovium. Knee effusions and synovial thickening are common and are easily detected during the early course of the disease. Persistent effusions may lead to inhibition of quadriceps function by spinal reflexes, resulting in subsequent atrophy. Instability may develop after progressive loss of cartilage and weakening of ligaments; deformity may include genu valgus or varus and flexion deformities. The energy expenditure to stand or walk significantly increases if there are flexion deformities of the knees.

Hips

The hip is commonly involved in RA; however, because of its deep location, its involvement is not always readily apparent early on during the course of the disease. Hips are difficult to examine by direct inspection or palpation. Limited motion or pain on motion and weight bearing are the hallmarks of hip involvement. The Patrick maneuver (flexion, external rotation, and abduction) is abnormal in this situation. A flexion deformity may be demonstrable by conducting a Thomas test. The Thomas test is performed by flexing one hip (with the patient supine) while restricting pelvic motion by keeping the other hip in the neutral position on the examination table. If the hip cannot be maintained in the neutral position, a contracture is present.

Cervical spine

Neck pain on motion and occipital headache are common manifestations of cervical spine involvement (seen in the image below). Most patients with cervical spine involvement have a history of the disease for more than 10 years. Clinical manifestations of early cervical spine disease consist primarily of neck stiffness that is perceived throughout the entire arc of motion. The atlantoaxial joint is a synovial-lined joint and is susceptible to the same proliferative synovitis and

subsequent instability seen in the peripheral joints. Patients with severe destruction in the hands (arthritis mutilans) are very likely to have symptomatic cervical spine abnormalities, as are those patients taking significant amounts of corticosteroids for control of RA.

Neurologic involvement ranges from radicular pain to a variety of spinal cord lesions that may result in weakness (including quadriparesis), sphincter dysfunction, sensory deficits, and pathologic reflexes. Transient ischemic attacks and cerebellar signs may reflect vertebral artery impingement from cervical subluxation or basilar artery impingement from upward migration of the dens. Tenosynovitis of the transverse ligament of C1 may lead to C1-C2 instability. Myelopathy secondary to rupture of the transverse ligament may lead to neurologic deficits. Radiculopathy is most common at the C2 root, although symptomatic subluxations may occur at any level.

Symptoms of cervical myelopathy are gradual in onset and are often unrelated to either the development of or accentuation in neck pain. When neck pain does occur, it frequently radiates over the occiput region in the distribution of the C1-3 nerve roots. The Lhermitte sign, in which tingling paresthesia that descends through the thoracolumbar spine occurs as the cervical spine is flexed, is typically observed.

During the physical examination, it is important to assess the following signs and symptoms[4]:

- Stiffness
    - On physical examination, stiffness is determined by limitation of motion, which may vary with the time of day. Stiffness due to articular surface derangement or soft-tissue contractures about the joint does not vary with the time of day.
    - Severe stiffness in the hands may improve with heat, but it is most effectively relieved with active exercise. These modalities reduce stiffness immediately after application, but unfortunately, they do not prevent the return of stiffness.
- Tenderness
    - Direct palpation can elicit joint tenderness.
    - Tenderness can vary significantly among patients and with the method of application of force used to elicit tenderness. The examiner should try to apply approximately the same pressure for each patient examined to minimize variation over time.
    - The enlarged synovial membrane, periarticular ligaments, and supporting structures are the major pain-sensitive structures.
    - Muscles also may become tender, but rarely is this due to myositis. Muscle tenderness is not specific for RA. Severe muscle tenderness should suggest other differential diagnoses including fibromyalgia or a regional pain disorder.
    - Bony prominences are generally tender, as periarticular structures tend to be more vulnerable to palpation at these sites.
- Pain on motion
    - Pain on motion often is used as a surrogate for tenderness in joints that are difficult to directly palpate due to overlying muscle and other tissues. The areas that are difficult to palpate include the cervical spine, shoulder, and hip.
    - Pain on motion of the joint may be due to noninflammatory processes that also interfere with the joint's normal, almost frictionless motion, including damage of cartilage and bone.
    - Additionally, joint instability or subluxation causes pain on motion because of musculotendinous imbalances across the joint. Documenting the positions of motion at which pain occurs can be useful.
- Swelling
    - Early in the disease process, there is an influx of inflammatory cells into the synovial membrane, with subsequent angiogenesis, proliferation of chronic inflammatory (mononuclear) cells and resident synovial cells, and marked

histologic changes—a 2 – cell-layer lining membrane changes to a thickened membrane that often has villous projections into the joint space.
    - Enlargement of the synovial membrane is noted on physical examination as thickening of the synovium that may obscure joint margins. This thickening is most evident in the small joints of the hands and feet. In the MCP and MTP joints, the outline of the base of the proximal phalanx may become indistinct, and in the PIP joints of the fingers, a fusiform swelling is noted due to the anatomy of the synovial reflections.
    - If synovial proliferation is abundant, a doughy texture may be felt due to the resultant soft-tissue mass. Such synovial proliferation is commonly identified in the PIP, MCP, elbow, ankle, MTP, and knee joints, as well as in the flexor tendons of the fingers, the common extensor compartment of the dorsal wrist, and the extensor carpi ulnaris tendon sheath.
    - Joint effusions also may contribute to swelling by distending the joint. When the effusion is put under increased pressure with joint flexion, the synovium may be forced between articular structures and a portion becomes trapped and separated from the rest of the joint, forming a Baker cyst. More fluid is forced into the structure with subsequent loading of the distended joint, and a 1-way valve effect may prevent the fluid from returning to the joint.
    - Baker cysts, one of which is seen in the image below, may be seen in most peripheral joints and are most commonly recognized in the knee. The larger the effusion, the more likely a painful cyst will develop. Rupture of a Baker cyst at the knee may resemble acute thrombophlebitis with distal dissection of inflammatory joint contents along fascial planes as far as the ankle and dorsal foot.
- Deformity
    - Deformity of the joint may develop over time as articular and supporting structures are damaged by the inflammatory process.
    - By the time deformity has developed, the diagnosis of RA is in little doubt; however, recognition of the inflammatory aspects of the arthritis before the development of deformity is required for optimal management of RA. Loss of cartilage from proteolytic and mechanical degradation, combined with stretching and weakening of the periarticular ligaments and their attachments, allows forces acting across the joints to deform them. The small joints in the hands and feet are most commonly deformed in this manner; greater than 10% of patients with RA develop deformity of the small joints of the hands within the first 2 years of the disease, and at least one third develop such deformities over time. Joint instability is seen if disruption of supporting structures has occurred.
- Limitation of motion
    - Limitation of motion occurs as a result of articular surface damage, joint and tendon sheath swelling, or alteration of joint supporting structures.
    - Effusion may limit joint motion through pain or by causing sufficient tightness of the joint capsule to impede joint mobility.
    - Fibrosis involving tendons and muscles may limit normal joint motion and result in flexion contractures.
    - Joint deformities and subluxations invariably limit motion because of mechanical factors.
- Extra-articular manifestations
    - RA is a systemic disease, and most individuals with the disease experience extra-articular manifestations such as generalized malaise and fatigue.
    - Rarely, a patient presents with extra-articular manifestations prior to the onset of arthritis. Some of these manifestations are more common in men (eg, pleural

involvement, vasculitis, pericarditis), but the proportion of men and women involved with other manifestations is similar to that of RA overall.

- Rheumatoid nodules
    - Rheumatoid nodules occur in approximately 25% of patients with RA, but they occur in less than 10% of patients during the first year of the disease. They are most commonly found on extensor surfaces or sites of frequent mechanical irritation.
    - The olecranon process, proximal ulna, back of the heel, occiput, and ischial tuberosities are common periosteal sites for rheumatoid nodule development. Nodules also may form in subcutaneous tissues of the finger, in toe and heel pads, in tendons, and in viscera.
    - Rheumatoid factor (RF) is almost invariably present, and if absent, other diagnoses are suggested.
    - Frequently, there is a discrepancy between the level of articular inflammation and the progression of nodule formation. Patients with rheumatoid nodulosis have a great number of nodules, usually subcutaneous, and may have little active synovitis. In a similar fashion, patients whose articular inflammation responds well to treatment with methotrexate may have a seemingly paradoxical rapid increase in the number of nodules.

6. Materials of methodological support classes

6.1. Methodological support of classes

1. Definition
2. Spread
3. Pathogenesis.
4. Classification.
5. Clinical features.
6. Diagnostics.
7. Treatment

6.2. *Information necessary for the formation of knowledge - skills can be found in the literature*

- Basic educational literature

1. Kliegman, R.M., St Geme, J.W., Blum, N.J., Shah, S.S., Tasker, R.C., Willson, K.M., & Behrman, R.E. (Eds.). (2019). Nelson Textbook of Pediatrics (21st ed.). 4264 p.
2. Ghai ”Essential pediatrics ” 9th Edition. 2019. 814 p.
3. Ombrello MJ, Arthur VL, Remmers EF, et al. Genetic architecture distinguishes systemic juvenile idiopathic arthritis from other forms of juvenile idiopathic arthritis: clinical and therapeutic implications. Ann Rheum Dis 2017; 76:90.
4. Martini A, Ravelli A, Avcin T, et al. Toward New Classification Criteria for Juvenile Idiopathic Arthritis: First Steps, Pediatric Rheumatology International Trials Organization International Consensus. J Rheumatol 2019; 46:190.

- Additional scientific and methodological literature

1. Aggarwal R, Ringold S, Khanna D, et al. Distinctions between diagnostic and classification criteria? Arthritis Care Res (Hoboken) 2015; 67:891.

6.3. *The estimated card for independent work with literature*

N	Main Task	Recommendation	Answers
1	2	3	4
1	Acquaint with literature and educational goals	Give information about epidemiology of the disease Give the definition of the disease studied.	

2	Etiology	Fill the scheme of etiological factors … % … % … % … %	
3	Pathogenesis	Fill the scheme of pathogenetic factors Pathogenesis	
4	Clinical data	Make differential diagnosis of this disease and similar to its condition	
5	Diagnosis	Make and explain diagnosis according to the results of clinical, laboratory and instrumental data.	
6	Treatment	Make program of treatment. Write prescription of preparations which is used for the treatment of this disease Rp … Rp … Rp … Rp …	
7	Prophylaxis and rehabilitation	Fill the scheme of dispensary control N | Specialist | Time	

7. Materials for self-control on the quality of training.

1. anatomical and physiological of the articular system of children of different age groups.
2. etiology and pathogenesis of juvenile rheumatoid arthritis
3. clinical forms of juvenile rheumatoid arthritis.
4. clinical characteristics of juvenile rheumatoid arthritis
5. principles of treatment of various forms of JRA.
6. principles of rehabilitation of JRA in children.

Tests

1. An 8-years-old child suffers from fever that is accompanied by fine-spotted pink colored eruption on the whole trunk and limbs, hydropic interphalangeal joints. Besides such signs like “morning constraint”, symptoms of exudative pericarditis and enlargement of peripheral lymphatic nodes, liver and spleen take place. From what illness does this child suffer from?

A. Rheumatism
+ B Juvenile rheumatoid arthritis
C. Osteomyelitis, septic form
Д. Systemic disease of connective tissue

E. Infectious allergic arthritis

2. The symptoms that testify to eye-lesion in the form of uveitis appeared in a 3-years –old girl that suffers from rheumatic disese. What disease is the development of uveitis typical?

A. Juvenile rheumatoid arthritis. Joint-systemic form
+ B Juvenile rheumatoid arthritis. Joint form mainly
C. Systemic lupus erythematosus
Д. Dermatomyositis
E. Scleroderma systematica

3. A 10-years-old boy was admitted to the hospital. An initial diagnosis of juvenile rheumatoid arthritis was made after clinical examination. What symptom is more significant for diagnosis of this illness?

A. Affection of big joints
B. Zonal flushing of joint
+ C "Morning constraint" of movements in joints
Д. Enlargement of heart
E. Acceleration of heart rate

4. The arthritis of elbow and ankle joints, involuntary movements of mimic muscles, annular rash on the abdomen and hips, deafness of cardiac sounds and low grade fever were found in an 11-years-old boy that suffered from tonsillitis two weeks before. Indicate the most hypothetical diagnosis.

A. Motor neurosis
B. Reactive arthritis
C. Allergic carditis
+ Д Rheumatism
E. Rheumatoid arthritis

5. A normochromic anemia accompanied by reticulocytosis was detected in a 4-years-old girl that suffers from juvenile rheumatoid arthritis. Indicate the most probably reason of anemia.

A. Intravascular hemolysis
B. Lack of vitamin B-12
C. Lack of iron
+ Д. Latency ulcerous hemorrhage
E. Depression of marrow

6. In the ananmesis of a 7-years-old boy it was mentioned that fever till 40˚C, spindle-shaped edema of digitis, knee and ankle joints continued for three months, pain in the upper part of sternum and in the cervical region of vertebral column. Indicate the most probable diagnosis.

+ A Juvenile rheumatoid arthritis
B. Rheumatism
C. Toxic synoviitis
Д. Septic arthritis
E. Osteoarthritis

7. A 12-years-old girl is complaining of the exertional dyspnea, inertia, fatigability and skin rash. She suffered from tonsillitis three weeks before. The sharp pains in the beginning in the right and later in the left knee joints, edema in the same place

and limitation of active and passive movements in affected joints accompanied by increased body temperature till 39˚C, were suddenly developed in about 10 days after recovering. On the background of started therapy, appeared an eruption on whole trunk and limbs in the form of round-shaped pink colored spots. Objective evidences were as follows: the skin is pale, solitary elements of skin annular rash are detected on all limbs, hard breath evaluated over the entire lung fields. Heart's borders are a little bit dilated to the left. Cardiac sounds are muted. Pulse rate is 96 beats per minute. There is heaving and prolonged systolic murmur on the cardiac apex ongoing to axillary region. The liver is enlarged up to 2cm. Make the initial diagnosis.

A. Reactive arthritis
B. Infectious endocarditis
C. Annular erythema
Д. Rheumatoid arthritis
+ E Rheumatism

8. A 10-years-old patient complains of shortness of breath by walking, increasing body temperature till 38˚C, tenderness and swelling throughout both knee joints. He suffered from tonsillitis two weeks ago. Edema, flushing, limitations of movements in both knee joints, dilatation of cardiac borders to the left, tachycardia, deafness of cardiac sounds, systolic murmur in the heart's apex region were disclosed by medical examination. Indicate the probable diagnosis.

A. Non rheumatic carditis
+B. Rheumatism
C. Still's syndrome
Д. Systemic lupus erythematosus
E. Infectious allergic arthritis

9. An 8-years-old boy belongs to group of children who are in poor health due to frequent tonsillitis and viral infection of upper respiratory tract. He complains of periodical increase of body temperature till 37, 5˚C and arthralgia. Objective evidences were as follows: the patient looks pale, periorbital cyanosis can be observed, heart's sounds are muted and dynamic systolic murmur in the cardiac apex region is evaluated. ENT-specialist has already identified chronic decompensated tonsillitis. In what exact high risk group is an inclusion of this patient appropriate?

A. Systemic lupus erythematosus
B. Chronic bronchial-pulmonary pathology
C. Respiratory allergosis
Д. Rheumatoid arthritis
+ E Rheumatism

10. A 10 years-old boy is suffering the third day from an unknown illness. He complains of stomach ache, severe tenderness and pronounced limitation of movements in the left knee and right elbow joints. Two weeks before he suffered from tonsillitis. The fever is till 38, 5˚C and affection throughout both ankle joints were detected during first day of his illness. The dilatation of cardiac dullness up to 2cm, tachycardia till 120 beats per minute, impaired I cardiac tone, gallop rhythm, "soft" systolic murmur near the heart's apex were evaluated. What diagnosis does the described clinics comply to?

A. Reactive arthritis
B. Systemic lupus erythematosus

C. Infectious allergic arthritis
Д. Juvenile rheumatoid arthritis
+ E Rheumatism

11. The recurrent increase of body temperature till 39˚C, spindle-shaped edema of digital joints, tenderness in the upper part of sternum and neck and "morning constraint" can be observed during the last 2 months in a 12-years-old girl. Indicate most probable diagnosis.

A. Osteoarthritis
B. Rheumatism
C. Toxic synoviitis
Д. Septic arthritis
+ E Juvenile rheumatoid arthritis

12. A 5-years-old child has been hospitalized complaining of increased body temmperature till 38˚C . In the patient's past is noticed fever till 40˚C. The spindle-shaped edema of digital joints and pain in the upper part of sternum are evaluated by medical examination. What is your initial diagnosis?

A. Septic arthritis
B. Rheumatic fever
C. Toxic synoviitis
+Д Juvenile rheumatoid arthritis
E. Osteoarthritis

13. A 7-years-old child complains of pain and edema in regions of the right knee and elbow joints. Pain and swelling of the left knee joint were noted in two days. This child suffered from tonsillitis two weeks before hospitalization. General health condition of the patient is poor. Both knee and left elbow joints are edematous and hyperemic. Cardiac borders are dilated. Apex beat is poured. The first tone on cardiac apex is impaired and accompanied by heaving systolic murmur with irradiation in the left axillary region. What kind of disease does this child suffer from?

A. Reactive arthritis
B. Infectious allergic polyarthritis
C. Juvenile rheumatoid arthritis
+ Д . Rheumatism, rheumatic endomyocarditis, polyarthritis
E. Systemic lupus erythematosus

14. A 10-years-old child complains of remarkable pain and edema of both knee joints that were extended in two days to both ankle joints. Besides that an itching rash and increased body temperature were noticed. Arthralgia appeared immediately after the patient suffered acute viral respiratory infection. The child has fever till 38˚C. Both his knee- and ankle joints are edematous and hyperemic. Cardiac borders are within normal limits. The apex beat is localized. Cardiac sounds are invariable but the dynamic systolic murmur in heart's apex region can be evaluated. Indicate the proper diagnosis.

A. Rheumatism, rheumatic myocarditis, polyarthritis
+ B Postinfectious arthropathy
C. Juvenile rheumatoid arthritis
Д. Still's syndrome
E. Systemic lupus erythematosus

15. A 10-years-old child complains of remarkable swelling of both knee- and ankle joints and pain in the cervical part of his spine. There is a symptom so-called "morning constraint". Recommendation of anti-inflammatory therapy to the patient was successful. What disease could be spoken about?

+A Juvenile rheumatoid arthritis
B. Osteochondrosis
C. Rheumatism
Д. Infectious allergic polyarthritis
E. Systemic lupus erythematosus

16. The illness is proceeding like oligoarthritis of first type. In a 16-years-old girl who is suffering from juvenile rheumatoid arthritis from age 7. The iridocyclitis was detected by an ophthalmologic examination and as a result of this fact, local steroid medicines were suggested to her. The treatment with above mentioned drugs within next three months was ineffective. What kind of therapeutic management would you prefer?

A. Prescription of gold preparations
B. Keep on with local steroid therapy
C. Prescription of maximal dose of aspirin
+Д Prescription of systemic corticosteroids
E. Prescription of chloroquine

17. The intermitting fever accompanied with chills could be observed within three weeks in an 8-years-old boy. Signs of polyarthritis followed by spotted-populous eruptions on the trunk and face predominating at febrile periods. The patient has tachycardia and hepatosplenomegaly (Banti's syndrome). Cardiac sounds are clear. The antibacterial therapy administered during two weeks did not give a positive result. What kind of pathology does such clinic cause?

A. Systemic scleroderma
B. Rheumatism
C. Sepsis
Д. Systemic lupus erythematosus
+ E Juvenile rheumatoid arthritis

18. A 13-years-old boy complains of pains and swelling of both ankle joints, frequent strangury urinations and reddening of conjunctives. What is your initial diagnosis?

A. Infectious allergic polyarthritis
B. Juvenile rheumatoid arthritis
+ C Reiter's disease
Д. Systemic lupus erythematosus
E. Systemic scleroderma

19. A child is 4 years old only. He is sick during the last three days. The patient fell ill unexpectedly from a rise of temperature till 39˚C. The body temperature changed itself within 2 – 2, 5˚C and the decrease of it was accompanied by profuse sweats during the day. Pink colored polymorphous eruptions of different localization appeared periodically. Knee- ankle- and wrist joints hurt and became swollen. The child can not lean on his legs and take goods. Objective evidences are : body temperature is 39˚C, liver is enlarged up to 3cm, spleen is enlarged up to 2cm and all groups of lymphatic nodes are palpable. Both ankle joints are gummy and tenderness and their outlines are smoothed. The blood test revealed Hb 112g/ Liter, red cells – 3,9 X 10^{12}/Liter, leucocytes – 12,9 X 10^{3}/Liter, eosiniphils – 6%, rob nuclear cells – 1%, segmented leucocytes –

48%, lymphocytes – 35%, monocytes – 10%, ESR – 54mm/hour. Indicate more probable diagnosis.

A. Systemic lupus erythematosus
+ B Juvenile rheumatoid arthritis
C. Reactive arthritis
Д. Rheumatism
E. Sepsis

20.The parents of a 7-years-old boy asked for a help in the admission department. Their child was complaining of pain in the right knee joint region for three months. At the last time patient's mother has noticed a limitation by movements of his right leg and a "morning constraint" of her son that disappears closer to evening. From what disease is this child suffering?

A. Rheumatism
B. Osteomyelitis of knee joint
C. Reactive arthritis
+Д Juvenile rheumatoid arthritis
E. Traumatic arthritis

21.The following signs of unknown disease like edema of knee joint, "morning constraint" and increase of body temperature are observed in a 4-years-old child during the last four months. In the synovial fluid has been displayed a great deal of mucin and phagocytes. Indicate the more probable diagnosis.

A. Reactive arthritis
B. Osteomyelitis of knee joint
C. Posttraumatic synoviitis
+ Д Juvenile rheumatoid arthritis
E. Rheumatic arthritis

22.A destruction of the articular cartilage by a granulation tissue is marked in an 11-years-old girl. For what disease is it typical?

A. Rheumatism
B. Systemic lupus erythematosus
C. Systemic scleroderma
Д. Reactive arthritis
+ E Juvenile rheumatoid arthritis

23.An amyloid degeneration of parenchymatous organs was developed in a 14-years-old boy.In what disease is it pathognomic?

A. Rheumatism
B. Systemic lupus erythematosus
C. Systemic scleroderma
Д. Reactive arthritis
+E Juvenile rheumatoid arthritis

24.An affection of hip and mandibular joints was discovered in a 9-years-old patient. In what disease does such pathology tell about the weight of clinical course?

A. Rheumatism
+ B Juvenile rheumatoid arthritis
C. Reactive arthritis
Д. Systemic scleroderma
E. Systemic lupus erythematosus

25.The diagnosis of JRA has been made in a 3-years-old child. What clinical version of JRA can the application of hormonal medicines be suggested?

A. Joint form with II degree of activity
B. Joint form coupled with eyes affection
C. Joint form with III degree of activity
+ Д Joint form with I degree of activity

Tasks

1.A 12-years-old boy complains of the increase of body temperature till 39-40˚C, intense pains especially at night time throughout both ankle joints and "morning constraint" in joints which vanishes at the second half of day. The hydropic periarticular soft tissues in the region of both ankle joints and moderate local hyperthermia of those tissues are determined by medical examination. Active and passive movements in above mentioned joints are limited in volume, difficult and extremely painful. Painless and welded with fascia nodules as large as a pea on the extensor surface of both shanks are palpated. In the blood test are noted leucopenia, increase ESR till 40mm/hour, positive CRP (C-reactive protein) ++, absence of rheumatoid factor and higher till 15% content of α-2-globulin. The X-ray examination of both ankle joints reveals signs of an effusion into joint cavities and an infiltration of periarticular tissues.

Assignment:

1.Make a nosologic diagnosis
2.Enumerate all signs of activity's process
3.At what degree does the process correspond with enumerated X-ray symptoms?
4. Make a clinic diagnosis
5.Prescribe a pathogenetic therapy

2.A 6-years-old girl is sick for three years. She complains of arthralgia including at rest in both knee joints, "morning constraint" which lasts about half an hour and low grade fever. Objective findings are: the general health state of patient is poor. Her skin is pale. She is malnourished. Both knee joints are spheroid deformed. The skin in knee joints region has normal coloration but its local temperature is little bit increased. Knee joints movements are painful. The extent of active and passive joints movements is extremely limited. The patient's gait is markedly changed because she can move herself with a help of crutches only. There is no pathology revealed internally. Double uveitis is disclosed only. The X-ray of knee joints has fixed the presence of following symptoms: epiphyseal osteoporosis, garnetting of cartilage, narrowing of joint space and solitary erosions. Laboratory findings are: ESR 15mm/hour, positive CRP(C-reactive protein) +, negative RF (rheumatoid factor), increased content of α-2-globulin till 12%.

Assignment:

1.Make a nosologic diagnosis
2.Enumerate all diagnostic criteria of that disease
3.In what degree does the process corresponds with enumerated X-ray symptoms?
4.Make a clinic diagnosis
5.Enumerate all purposes of treatment

3.A 10-years-old boy has been ill since he was 5years old. From the beginning his illness was generalized articular syndrome accompanied by an affection of cervical part of his spine has been already formed in him. On admission to the hospital the patient complains of arthralgia, markedly deformities of joints, increase of body temperature till 39˚C, weakness, "morning constraint" in joints not subsided during a whole day. Objective status: patient's general health state is poor; he looks pale like a ghost; he lagsbehind with physical growth and development. The polymorphous eruption on a skin of face, trunk and limbs is noticed. Both palms have intensive pink color, fine brown hearths on the nail wall of all fingers are fixed. There is a pronounced both-sided ulnar deviation of the hand. The globular deformation of knee joints

and spindle-shaped deformation of elbow joints are observed. Their palpation is painful and the local temperature of soft tissues in the region of those joints is moderate increased. Same symptoms were disclosed at the cervical part of patient's backbone. Peripheral lymphatic nodes as large as peas, neither painful nor united with surrounded tissues. The cardiac borders are dilated and heart sounds are muted. In the heart apex systolic murmur is listened. The splenomegaly can be observed. Laboratory findings are: ESR increased till 40mm/hour, pronounced hypochromic anemia, leucopenia, increased till 15% contain of α-2-globulin, positive CRP (C-reactive protein) ++, positive RF (rheumatoid factor). On the X-ray films of affected joints are registered signs of osteoporosis accompanied by degradation of articular cartilage.

Assignment:

1.Make a nosologic diagnosis
2.What instrumental methods of investigation are necessary to prescribe for this patient?
3.In what degree does the process correspond with enumerated X-ray symptoms?
4.Make a clinic diagnosis
5.Prescribe a combine immune-suppressive therapy

4.A 2-years-old child fell acutely ill unexpectedly 3 months ago when a hectic fever first appeared accompanied by chills and profuse sweats and arthralgia in the large joints region increased on the background of fever. Objective status: the patient's general health state is poor. He feels feverish till 40˚C. He looks sluggish and pale. The "morning constraint" of large joints that subsides markedly in the afternoon, can be observed. The urticarious rash on trunk's skin is fixed. The palpation of unchanged soft tissues in areas of both hip and knee joints is painful. All above mentioned joints look outwardly untouched but their local temperature is a little bit increased. The myocarditis accompanied by pleuropneumonitis was revealed. The laboratory findings are characterized by presence of: ESR speeded up till 60mm/hour, neutrophilous leucocytosis, positive CRP (C-reactive protein) +++, increase a content of α-2-globulin till 18%, hypochromic anemia and negative RF (rheumatoid factor). The X-rays of affected joints show pronounced edema of periarticular soft tissues on the background of absence of any bone changes.

Assignment:

1.Make a nosologic diagnosis
2.What additional laboratory (microbiological and serological) examinations are necessary to perform in that case?
3.What degree does the process correspond with enumerated X-ray symptoms?
4.Make a clinic diagnosis
5.Prescribe the nonsteroidal anti-inflammatory drugs

5.A 6-years-old girl is undergoing the course of treatment as an inpatient. It got known about the extremely acute onset of disease: in accordance with her anamnesis. Within three weeks she suffered from hectic fever that peaks and falls accompanied by a chill and profuse sweating correspondingly were registered usually in the morning. That becomes stronger by the peak of fever the nonpruritic spotted-papulous rash appeared on flank surfaces of patient's trunk, buttocks and limbs brief. The cardiac pain accompanied by palpitation and shortness of breath appeared later. The acrocyanosis and pulsation in epigastric area by examination. There are disclosed the dilated mainly to the left cardiac borders, pronounced systolic murmur throughout whole heart area and pericardial friction rub. All groups of peripheral lymphatic nodes enlarged up to 4 – 6mm; all of them have a solid-elastic consistence, are mobile and painless. The nodes unite neither between each other nor with surrounding tissues. A slightly impaired vesicular respiration accompanied by unaltered percussion sound is determined throughout both lungs. The abdomen is soft and painless. The liver enlarges up to 2cm, has a sharp edge of solid-elastic consistence. The spleen has normal age-specific size. There is a

"morning constraint" in the areas of II and III metacarpophalangeal articulations continued as a rule during two hours. Swelled soft tissues, tenderness by movements and local hyperthermia on the background of an absence of visual skin changes are pronounced at the same place. Laboratory findings are: hypochromic anemia, neutrophilous leucocytosis, ESR is 38 mm/hour, content of α-2-globulin is 14%, positive CRP (C-reactive protein) ++, and positive RF (rheumatoid factor). X-rays films of affected joints fixed signs of periarticular osteoporosis and edema of soft tissues.

Assignment:

1. Make a nosologic diagnosis
2. What after effects of illness can develop in this patient?
3. At what degree does the process correspond with enumerated X-ray symptoms?
4. Make a clinic diagnosis
5. Prescribe the antibody for intravenous administration

6.A 12-years-old girl was discharged from the hospital not long ago where she was admitted because of an exacerbation of her main disease which appeared after she suffered an acute viral infection of upper respiratory tract. This girl is registered on the books at dispensary department of district polyclinic. From the patient's past it got known that she is suffering from that illness in the last 5 years. The onset of main disease was subacute and starts from appearance of arthralgia and soft-tissue swelling of symmetric joints (knee- and ankle) on the background of low grade fever. During the years of disease true flexible contractures of all affected joints and the sense of "morning constraint" that kept safe within one hour were formed in this patient. Objective data: the body temperature is within normal limits; contain of α-2-globulin reaches 9%, negative CRP (C-reactive protein), ESR increased till 15mm/hour. X-ray of knee- and ankle joints fixed presence of subluxations and anchylosis on the background of the osteoporosis and destruction of bone cartilage.

Assignment:

1. Make a nosologic diagnosis
2. What after effects of illness will appear in this patient?
3. In what degree does the process correspond with enumerated X-ray symptoms?
4. Make a clinic diagnosis
5. Prescribe the non-drug therapy
6.

7.A 15-years-old boy who is ill from age 3, when on the background of low grade fever showed polyarthritis of symmetric joints and namely wrist-, elbow- and fine joints of both hands. Structural changes of fine wrist joints accompanied by forming of anchylosis in the same area have been developed towards to the end of first year of his disease. The lag in growth especially of upper extremities is noticeable for today. All affected joints are spindle-shaped deformed. There are true flexible contractures. From the visceral organs no pathology was disclosed. Patient's skin is pale and clean. A sense of "morning constraint" keeps safe till noon. The body temperature ranges from 37, 4 to 37, 6˚C. Laboratory findings revealed neutrophilous leucocytosis till 10 X 10^3/Liter and moderate hypochromic anemia; elevated till 15mm/hour ESR, positive CRP (C-reactive protein), positive RF (rheumatoid factor) and increased till 12% contain of α-2-globulin.

Assignment:

1.Make a nosologic diagnosis
2.What does pannus mean?
3.Describe the articular syndrome in this disease
4.Make a clinic diagnosis
5.Enumerate indications for oral dosage of glucocorticoids

8.An 11-years-old girl is suffering since age 4, from unknown illness that has an articular syndrome as the leading symptom. With all this going on, her left elbow and right ankle joints are affected by pathological process but from age 5, an illness of eyes namely uveitis was diagnosed. Objective data: it is noticed the asymmetric growth of patient's left arm and right leg. Cataract as a complication of uveitis. The skin is pale and clean. The body temperature is within normal limits. The sense of "morning constraint" keeps safe during two – three hours. No pathology was disclosed from the visceral organs. Visually all affected joints are spindle-shaped deformed; active and passive movements in these joints are markedly limited, the skin in their areas is unaltered in spite of a little bit increased local temperature in the same region. Muscles surrounding all affected joints are atrophied. X-ray films of joints that are involved in pathological process determine osteoporosis, an unimportant cartilage's destruction and narrowing of articular cave. Laboratory findings are: fraction of α-2-globulin is increased till 13%; ESR reaches 13mm/hour, positive CRP (C-reactive protein), negative RF (rheumatoid factor), slight degree of hypochromic anemia.

Assignment:

1.Make a nosologic diagnosis
2.Enumerate all indications for hospitalization in this illness
3.In what degree does the process correspond with enumerated X-ray symptoms?
4.Make a clinic diagnosis
5.Prescribe a therapy with local glucocorticoids

9.A 9-years-old girl is suffering from this disease since age 4, when this child demonstrated within three weeks hectic fever, periodical appearance of spotted-papulous rush on face, trunk and limbs. All groups of lymphatic nodes enlarged until four -6mm. The patient complained of dyspnea and dry unproductive cough. The shortness of breath with involving of auxiliary muscular system and cyanosis of nasolabial triangle by examination is revealed. Auscultation disclosed the great number of fine moist rales and crepitation in bases of lungs. On that background are troubling pains in symmetric articulations of legs namely in hip-, knee- and ankle joints and painful contractures. The skin in areas of above-mentioned joints is unchanged in spite of a little bit increased local temperature in same regions. The blood test discovered leucocytosis until 50 X 10^3/Liter, with a shift to the left up to 25 % of stab neutrophils; ESR speeded up until 65mm/hour, hypochromic anemia, positive CRP (C-reactive protein) and negative RF (rheumatoid factor). In five years from the beginning of disease the double-sided coxitis accompanied by aseptic necrosis of whirlbones, developed in this child.

Assignment:

1. Make a nosologic diagnosis
2. What pulmonary changes did take place in this child within the first weeks of her illness?
3. What degree does the process correspond with above-mentioned changes of hip joints?
4. Make a clinic diagnosis
5. Prescribe a pulse-therapy with methylprednisolone

10. A 10-years-old boy is complaining of slight pain in his right hip joint within the last few months. He limps slightly. There is no evidence about "morning constraint". The body temperature is normal but it decreases up to 1˚C on the right. At the same place, a symptom of laundress' skin which contains paleness of foot, its coldness and higher hyperhydrosis, lowering of capillary pulse and wrinkled skin on the plantar surface. The painful contracture of right sided hip joint accompanied by atrophy of gluteal muscles on the same side already formed during that time. The X-ray examination revealed the necrosis of epiphysis spongy substance and marrow. The hearths of necrosis detected in the paraepiphyseal zone of right thigh. There is short and wide affection femoral neck. Its outline is convex. Laboratory findings are : ESR is 15mm/hour, leucocytosis until 9 X 10^3/Liter with lymphocytosis, negative CRP and RF.

Assignment:

1.Make a nosologic diagnosis
2.Perform a differential diagnostics between JRA and osteochondropathy
3.What degree does the process correspond with enumerated X-ray symptoms?
4.Make a clinic diagnosis
5.Write a survey design of patients with JRA

11. A 9-years-old child fell acutely ill sick in winter. Headache and arthralgia appeared on the background of fever until 39˚C and diarrhea. From the patient's past is known that child ate fresh thermally unprocessed vegetables. Objective data: the chills accompanied by profuse sweats fix at the peak of fever. The nodal erythema and inflamed conjunctiva are noticed. The heart borders not dilate and cardiac sounds are muted a little. There is a dynamic systolic murmur in the cardiac apex area. The liver is enlarged until 1cm and has solid-elastic consistence. The spleen is enlarged until 0, 5cm too and painful by palpation. The right knee and left ankle joints are edematous and tenderness but their active and passive movements are safe. Laboratory findings are: leucocytosis until 12 X 10^3/Liter, ESR 40mm/hour, positive CRP (C-reactive protein) and negative RF (rheumatoid factor). X-ray of affected joints revealed no pathology.

Assignment:
1.Make a nosologic diagnosis
2.Describe a morbid affection of joints in this patient
3.Enumerate the diagnostic criteria of this illness
4.Give a prognosis regarding the affected joints in this case
5.Indicate the pathology by which an infiltration of periarthicular tissues and synovial membranes develops.

12.A 16-years-old boy helped his parents by calving. His body temperature increased unexpectedly until 40˚C in one month. The same time his general health state did not suffer a remarkable damage: a moderate headache accompanied by slight chill and profuse sweating was noted by him only. He didn't visit a doctor. Six weeks later he demonstrated a low grade fever again. Aching pains appeared in whole body accompanied by enlargements of all lymphatic nodes, liver and spleen. His right knee joint got a spheroid form on the background of joint arthralgia, hyperemic skin and increased local temperature. Passive and active movements are limited in extent and painful. There is tenderness along the right sciatic nerve.

Assignment:
1. Make a nosologic diagnosis
2. Describe an articular affection in this patient
3. Enumerate diagnostic criteria of this illness
4. With what diseases is it necessary to perform differential diagnosis?
5. Prescribe a local therapy for juvenile rheumatoid arthritis.

8. **Classroom materials for self-study**.

8.1. *List of educational practical tasks that must be completed during the practical exercises*:

1. To estimate the condition of child.
2. To take the anamnesis and carry out the physical examination of patient.
3. To estimate the results of additional investigation methods.
4. To make a diagnosis in accordance with modern disease classification.
5. To administer medical treatment of disease.
6. To make the plan of clinical examination.
7. To issue the recipes of medicine, for treatment of JRA.

9. Instructional materials for learning professional skills.

9.1. *Methods of work Stages of the possible*

List of educational practical tasks that must be completed during the practice session:

1. To define complaints, analyze anamnesis data, find typical clinical symptoms peculiar of the acute rheumatic fever, define the type.
2. To estimate x-ray, laboratory results, data of microbiological investigation.
3. To conduct a differential diagnosis.
4. To make a basic clinical diagnosis, accompanied diseases, and complications.

10. Materials for self study,

10.1. Tests

1. Anatomical and physiological of the articular system of children of different age groups.
2. Etiology and pathogenesis of juvenile rheumatoid arthritis
3. Clinical forms of juvenile rheumatoid arthritis.
4. Clinical characteristics of juvenile rheumatoid arthritis
5. Principles of treatment of various forms of jra.