

ODESSA NATIONAL MEDICAL UNIVERSITY

Department of Urology and Nephrology

GUIDELINES

with practical sessions for students

Discipline "Urology"

Lesson # 8 Chronic pyelonephritis. Pyonephrosis. Paranephritis. Nephrogenic hypertension.

Lesson №1 Symptoms of urological diseases. Peculiarities of the structure of diseases of the genitourinary system in Odesa region.

Academic discipline "Urology"

Level of higher education: Second (Master's)

Knowledge field: 22 "Health Care"

Specialty: 222 "Medicine"

Program of professional education: Medicine

Approved
methodological meeting on the chair

28. 08. 2023

Protocol № 1

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Subject of classes: Chronic pyelonephritis. Pyonephrosis. Paranephritis. Nephrogenic hypertension.

2. Background.

Inflammatory diseases of the kidneys and urinary organs are among the most common in all regions of the world. Inflammatory diseases of the urinary tract account for about 2/3 of all urological diseases. They can be worn as acute progressive flow of the threat to human life and long-term chronic relapsing gradual dysfunction of the urinary tract, development of other complications and long-term disability, high mortality. In recent years, admitted notable increase of these diseases among all age groups, especially among children. Result of inflammatory diseases is largely depend on the timely diagnosis and proper treatment of patients with adequate consideration of etiological factor, phases of inflammation and pathogenesis of diseases. Given the above, in these matters must be guided physicians of all specialties, especially therapeutic profile to which these patients are treated primarily for timely diagnosis and appropriate treatment.

3. Objectives of the lesson:

3.1. Educative Objectives:

1. Study the etiology, pathogenesis, clinical and basic principles of treatment of nonspecific inflammatory diseases of the urinary system

3.2. Educative Objectives:

1. Examine the main provisions of national urological school on non-specific and specific inflammatory diseases of the urinary system.
2. Develop a modern professional - clinical thinking for students.
3. Develop a sense of responsibility for each individual patient

3.3. Specific objectives:

• know:

1. Examine the main provisions of national urological school on non-specific inflammatory diseases of the urinary system.
2. Develop Generate professional - clinical thinking in students.
3. Develop a sense of responsibility for each individual patient.

3.4. Specific objectives:

• know:

1. The incidence of pyelonephritis in different age groups.
2. Etiology of pyelonephritis.
3. Factors contributing to the development and progression of chronic pyelonephritis.
4. Pathogenesis of chronic pyelonephritis.
5. Clinical symptoms of chronic pyelonephritis.
6. Diagnosis of chronic pyelonephritis.
7. Principles etiologhycheskoho and pathogenetic treatment of chronic pyelonephritis.
8. Prognosis of chronic pyelonephritis.
9. Etiology, pathogenesis and treatment paranefrytov, pyonephrosis.
10. Etiology and pathogenesis of cystitis.

3.5. On the basis of theoretical knowledge on the topic:

• be able to:

1. Collect anamnesis in patients with chronic pyelonephritis.
2. Conduct an objective examination of patients with chronic pyelonephritis.
3. 's Right to assign and interpret laboratory and biochemical methods in chronic pyelonephritis.
4. Apply radiological methods of examination of patients with chronic pyelonephritis and correctly interpret them.
5. Conduct sampling of urine for bacteriological tests and interpret them.

6. Putting indications for instrumental methods of examination of patients with chronic pyelonephritis.
7. Identify hidden leukocyturia in chronic pyelonephritis.
8. Identify principles of treatment strategy in chronic pyelonephritis.
9. Write recipes on the drugs used for etiologic and pathogenetic therapy of chronic pyelonephritis.
10. Prescribe antibiotics, used to treat chronic pyelonephritis.
11. Be able to make a Right assign and interpret laboratory, biochemical and functional methods in acute purulent kidney disease.
12. Putting readings and interpret radiological methods in paranephritis and pyonephrosis.
13. Identify therapeutic approach paranephritis, pyonephrosis.

1. Classroom materials to self-directed learning (interdisciplinary integration).

SUBJECTS	KNOW	BE ABLE TO
Previous disciplines		
Anatomy and Histology	Building of kidney and nephron, the building of the bladder and urethra	
Normal physiology	Function of pelvis and ureter, pelvis - renal and vesical - renal refluxes, tank bladder function and principles of urination act	
Physiopathology	Changes in acute purulent processes in the body and kidney	
Pathological anatomy	Changes in the kidney in acute and chronic pyelonephritis, changes in the kidney in apostematoses pyelonephritis, kidney carbuncle, and paranephritis. Pyonephrosis changes in the kidney in pyelonephritis during pregnancy, changes in the bladder and urethra in nonspecific and specific inflammation	Distinguish changes in infected hydronephrosis and pyonephrosis distinguish between changes in specific and non-specific inflammation
Topographic anatomy	Blood supply and building of the kidneys, retroperitoneal drainage of retroperitoneum and kidney in acute purulent diseases, indicators for urgent nephrectomy	
Microbiology	Properties of pathogenic and conditionally - pathogenic bacteria, viruses, protozoa	Taking and preparation of smears for bacteriological examination
Biochemistry	All types of metabolism	
Pharmacology	The effect of antibiotics on pathogens and antimicrobial effect of drugs on pregnant uterus and fetus	To get a prescription for antibiotics and broad-spectrum drugs used in urological

		practice
Introduction of internal diseases	Clinical - Laboratory studies; palpation of the kidneys, urinalysis, urine 3-cups-test, urine test by Zemnytski, quantitative method for determination of bacteriuria	To be able to interpret the results of clinical - laboratory tests
Surgery	Know the principles of operative interventions, asepsis and antiseptics	Identify the blood group and Rh - factor, to test the compatibility of blood and blood products to choose substitutes for immunosuppressive therapy acute & purulent kidney disease
Obstetrics	The course of a normal pregnancy and delivery, changes in the organs of the urinary and reproductive system during pregnancy	
The following subjects		
Anesthesiology & intensive care	The clinical picture and the stage of shock, diagnosis methods of terminal states	To be able to diagnose
Infectious Diseases	Renal disease in various infectious diseases	Differentiate
Obstetrics and Gynecology	Renal disease in different types of obstetrical and gynecological pathology	Differentiate
Integration within other subjects		
Infectious Diseases	Know clinic and diagnosis of influenza, hepatitis B, typhoid, meningitis, HIV - infection	Differentiate
Surgical diseases	Know clinic and diagnosed appendicitis, peritonitis, cholecystitis, pancreatic	Differentiate
Nephrology	Clinic and diagnosis of glomerulonephritis, amyloidosis	Differentiate
Proctology	Clinic and diagnostics paracolis, ulcer - destructive colitis, paraproctitis	Differentiate
Gynecology	Clinic and diagnostics pelvioperytonitis, suppurating ovarian cyst, adneksitis, endo - and peri-metritis	Differentiate

2. Content of subject

The most common non-specific inflammatory diseases of the urogenital organs that make up about 2/3 of all urological diseases are acute and chronic pyelonephritis. To non-specific inflammatory diseases also include pyonephrosis, paranephritis, retroperitoneal fibrosis (Ormond's disease), cystitis, parasystit, urethritis, prostatitis, vesiculitis, epididymitis, orchitis, balanitis, balanoposthitis, kavernita.

In pyelonephritis understand infectious - inflammatory process in nonspecific interstitial tissue and tubules of the kidney, simultaneously or sequentially impressive parenchyma. In the final stage it spreads to the blood vessels and glomeruli. Pyelonephritis may wonder predominantly renal parenchyma or pelvis (in which case the disease is more favorable).

Pyelonephritis is the most common kidney disease in all age groups. It is the reason for hospitalization of 4-5% of all children. During pregnancy, acute pyelonephritis occurs in 3 - 5 -% of pregnant women. Among adults it occurs at 100 people per 100 000 population in children - 480-560.

According to pathologists statistics, pyelonephritis detected in 8 - 20% of all autopsies, but the life the diagnose turns out to be only ¼ of patients. In 60-75% of cases develop between the ages of 30-40 years. Younger women sufferers pyelonephritis 4-5 times more often than men. This is due to anatomical features of the women urethra, which is much shorter than male and is near the vagina, which contributes to easy penetration by ascending infection in the bladder.

Pyelonephritis in men in younger and middle age is linked mainly with urolithiasis, chronic prostatitis, urethral stricture, various abnormalities of the kidneys and urinary tract. Increased frequency of pyelonephritis in elderly men is associated with the presence of prostate cancer, making it difficult to flow from the bladder and out of the kidneys.

Etiology. Pyelonephritis - bacterial disease. Refers publications on the role of viruses in causing pyelonephritis, mycoplasma, fungal flora. But, apparently, these microorganisms and is the starting factor, or acting in association with bacteria, play a supporting role in the development of the disease.

Leading place in the etiology of pyelonephritis assign Gram-negative flora - E. coli, Proteus. Along with drilled staphylococcus, enterococcus, klebsyella. There are associations of microbes.

One evidence of bacterial origin pyelonephritis in clinical trials is seeding bacteria from urine - bacteriuria. The absence of bacteriuria with clinically undeniable pyelonephritis may be associated with the separation of suppurative focus or blockade of the entire kidney, the transfer of bacteria in L - forms or protoplasts. Established the possibility of L - forms virtually all types of microorganisms responsible for the development piyelo nephritic process. L - forms of bacteria can persist for a long time in the body and be kind slumbering infection.

Pathogenesis. Factors preceding acute pyelonephritis, frequency arranged in the following order: Cool, pregnancy, bouts of renal colic, gynecological surgery, ARI and pneumonia.

The main pathogenetic link is the penetration of bacteria into the affected organ (kidney) and the state of immune defense microorganism. Of great importance are violations of urodynamics and renal blood - and lymph circulation. Currently accumulated extensive experimental, clinical, morphological data clearly demonstrate the role of all these factors in causing pyelonephritis, forming flow characteristics, becomes chronic. With apparent ease schemes infectious - inflammatory process - hit the infectious agent in the body, damage to the organ of inflammation - multifaceted needed detailed study to understand each pathogenetic link pyelonephritis. Specifies the types of microorganisms that cause uroinfections, and some factors of nefropatohenose: tropism to the renal parenchyma, the phenomenon of Gram-negative bacteria adhesion to the epithelium of the urinary tract through special fibers, the similarity of microbial antigens antigens of the human ABO system, found in 44 - 56% of strains of E. coli, the ability to proliferate in an acidic environment. The basic pathways of microorganisms in the kidney: hematogenous and ryno

genous. Some researchers admit the possibility and lymphogenous drift of the abdominal cavity. Hematogenous route possible on the background of acute bacterial origin of diseases (bronchitis, pneumonia, tonsillitis) or if there is a focus of chronic infection in the mouth, in the biliary tract, in the pelvis, etc. Urogenic path is implemented with infection of the lower urinary tract departments or by activation of saprophytes that normally exist in the distal urethra.

Equally important in the development of pyelonephritis is renal blood and lymph circulation. They may be due to processes that cause an increase in inside junction pressure, complicated pelvis - renal reflux with flebo and lymphostasis in renal parenchyma. Flebostasis and lymphostasis associated with them interstitium swelling, help fixing microorganisms in the parenchyma and parenchyma hypoxia - their survival.

Chronic pyelonephritis. Chronic pyelonephritis is usually a consequence of acute pyelonephritis. The most important reasons for the transition of acute infectious - inflammatory process in chronic are following:

1. Timely not recognized and does not eliminated disorders of urine outflow (urolithiasis, urinary tract stricture , prostate cancer, cystic - ureteral refluxes, Nephroptosis etc.).
2. Incorrect or insufficient duration of treatment of acute pyelonephritis , and lack of systematic follow-up of patients who have had acute pyelonephritis.
3. Formation of L - forms of bacteria and protoplasts pyelonephritis , able to stay long in the kidney tissue, while reducing the body's immune defense move in the original condition and cause acute disease .
4. Chronic comorbidities (diabetes , obesity , diseases of the gastrointestinal tract, tonsillitis , etc. .) That weaken the body and is a constant source of infection of the kidneys.
5. Immunodeficiency states.

The criteria for CP is keeping symptoms for more than 6 months or the presence of 2-3 exacerbations during this period.

There is a notion that chronic pyelonephritis may be primary, since many do not mark acute onset. Probably the acute onset often not noticed , because it takes place under the guise of SARS and other febrile illnesses.

CP flowing in waves with periodic exacerbations that do not always recognized because their expression is slight- the latent type of flow. While clearly delineated recurring exacerbations note recidive course.

Chronic pyelonephritis classified by the activity of the inflammatory process in the kidney.

I. Phase of active inflammation: a) - leucocyturia - 25 000 or more in 1 ml of force; b) bakteriyuriya - 100 000 or more in 1 ml of urine; c) active leukocytes (30% or more) in the urine of all patients; d) cells Shterngeymera - Malbyna urine in 25-50% of patients; e) titre of antibacterial antibodies in passive hemagglutination reaction (PGA) is elevated in 60-70% of patients; e) Erythrocyte sedimentation rate - above 12 mm / h in 50-70% of patients; i) increasing levels of average number of molecules in a 2-3.

II. Phase of latent inflammation. A) leucocyturia - up to 2500 in 1 ml of force; b) bacteriuria not present or no more than 10 000 in 1 ml of urine; c) active leukocytes urine (15-30%) in 50-70% of patients; d) cells Shterngeymera - Malbyna in urine are absent (with the exception of patients with reduced renal concentrating ability); d) antibacterial titer antibody response PGA normal (with the exception of patients who have acute illness was less than 1.5 months ago); e) Erythrocyte sedimentation rate - not more than 12 mm / hour; i) increase in blood medium molecules in 1.5 - 2 times.

III. Phase of remission or clinical recovery: a) leucocyturia absent; b) bakteriyuriya absent; c) cells Shterngeymera - Malbyna in urine are absent; d) antibacterial titer antibody response PGA normal; e) Erythrocyte sedimentation rate - less than 12 mm / h; f) the level of middle molecules in the normal range.

Pathological anatomy. Since the piyelonefryte infection in the kidney is distributed unevenly, the morphological picture of the disease is different in that form foci. In the centers of lesions of the kidney showing interstitial infiltrates of lymphoid and plasma cells and connective tissue scar . However, because periodically advancing relapse of pyelonephritis in kidney tissue showing inflammation of varying antiquity : together with changes characteristic of the old process refers focus fresh inflammatory changes in the form of infiltration of polymorphynuclear leukocytes.

Symptomatology and clinical course. Chronic pyelonephritis years can occur without clear clinical symptoms due to slow inflammation in the kidney tissue. Manifestations of chronic pyelonephritis is largely dependent on the activity, prevalence and stage of inflammation in the kidney. Varying degrees of severity and their combinations create multiple versions of the clinical signs of chronic pyelonephritis.

Diagnosis. In the diagnosis of chronic pyelonephritis substantial assistance does correctly collected history . You must find out the persistence of patients transferred to childhood kidney and urinary tract. Women should pay attention to the marked during pregnancy or shortly after delivery attack of acute pyelonephritis or acute cystitis. In men, particular attention should be given to trauma of the spine, urethra , bladder and urinary tract inflammatory diseases . It should also identify the presence of factors that contribute to the occurrence of pyelonephritis, such as abnormalities of the kidney and urinary tract , urolithiasis, Nephroptosis , diabetes, prostate cancer.

Of great importance in the diagnosis of chronic pyelonephritis with laboratory, radiographic and radioisotope methods.

Leucocyturia is one of the most important and frequently occurring symptoms of chronic pyelonephritis. If you suspect the presence of chronic pyelonephritis shown leukocyturia detection using methods Kakovsky - Addis (content in daily urine leukocytes) Ambyurzhe (number of white blood cells that are allocated for 1 min), Almeida - Nechyporenko (number of leukocytes in 1 ml strength) Stensfylda - Webb (number of white blood cells in 1 mm³ netsentryfuhyrovaniy urine).

If the doctor assumes that a patient with chronic pyelonephritis in remission, provocative tests used (prednisone or pirogenal).

Diagnostic value in chronic piyelonefryte should also reduce osmotic concentration of urine (less than 400 mOsm / L) and the decline in creatinine clearance of endogenous (below 80 ml / min). Reducing the concentration ability of the kidney can often be observed in the earlier stages of the disease. It indicates that the ability distal tubules maintain osmotic gradient towards the blood - tubules. There is also a decrease in tubular secretion as an earlier symptom of chronic pyelonephritis.

Are important methods for evaluating the immunological reactivity study features proteynuriyi and determination of antibacterial antibody titers.

Differential diagnosis must be made with tuberculosis of the kidney and glomerulonephritis.

Therapy. Chronic pyelonephritis treatment should include the following basic steps: 1) elimination of the causes of the violation passage of urine or renal blood flow, especially venous; 2) Appointment of antibacterial agents or chemotherapy with information antibiotikogramme; 3) enhance immune reactivity.

Restoring the flow of urine reaching primarily the use of a particular type of surgery (removal of prostate cancer, stones from the kidneys and urinary tract, when nephropeksiya Nephroptosis, plastic urethra or pelvis - ureter segment, etc.). Often after these surgical interventions are relatively easy to manage to get a stable remission of the disease and no long antibiotic treatment. Without a recovery in sufficient passage of urine use of antibiotics usually prevents prolonged remission.

In the active phase of treatment, patients should be fixed in the future the patient goes to outpatient treatment nephrologist, but with regular advice to the urologist, especially if not removed or the violation of urodynamics necessary control functions of the urinary system disorders.

Diet and water treatment depend on the stage of disease, level of kidney function, presence of hypertension. Typically, the patient should drink about 1.5 liters of fluid a day. The basic requirement for water treatment is a fractional fluid intake flow to the day, at intervals of 3-4 hours with large concurrent load. This provision is necessary to take into account the input of parenteral fluids during exacerbation of chronic pyelonephritis. Shot 6 times the reception is also recommended course of treatment with mineral waters.

Plan CP patients medical treatment consists of taking into account the stage of the disease, such as flow, clinical manifestations of kidney function, age and accompanying diseases.

Relatively isolated etiologic, pathogenetic, symptomatic therapy.

Causal in CP is antibiotic therapy. Use different tools: antibiotics, sulfa drugs, derived nitrofurans, oxytetracycline, nalidixic acid, herbal, antiseptic. Depending on these factors prescribe them in combination or in sequence.

All modern methods of antibiotic therapy CPs based on the following principles: 1) the selection of drugs based on susceptibility; 2) loading dose at the start of treatment; 3) a combination of drugs and the alternation of different groups; 4) long-term treatment.

If the doctor does not know about the microflora of urine, then choosing an antibiotic, it can take into account the nature and location of the alleged source of infection of the kidneys, medical history of efficacy in previous exacerbations. In bright exacerbation of CP is preferable to start with a semi penicillin.

Clinical efficacy of antibiotics provided not only their rational choice, but adequate therapeutic doses. In severe purulent that is not treatable with antibiotics other CPs prescribe antibiotics reserve (aminoglycosides, cephalosporins).

Always take into account the possible nephrotoxic effects of drugs. However, the serious condition of the patient the main criterion for the use of antibiotics, even potentially toxic is its efficiency. If the agent that is shown, it is difficult runs CP sensitive to selective aminoglycosides (monomitsin, kanamycin, gentamicin), use of these drugs is justified and gives a good effect even in functional renal failure.

Along with antibiotic use and other antibacterial agents, especially nitrofurans, nalidixic acid Nitrofurantoin, trimethoprim, some sulfapreparaty. Despite the widespread use of nitrofurans and nitrofurantoin, microflora urine of patients with CP retains sensitivity to them almost at the same level as 10 years ago.

Secondary importance at all stages of the disease are extracts from plants that have a disinfectant, diuretic and antizotemition action (fruit of juniper, rose brown, zemlyanyky forest, and bearberry leaves, cranberries, black currants, white birch, cranberries, plantain, nettle, horsetail grass field, flower cornflower blue cones hop usual, flaxseed, ortosyfon kidney, Indian, Javanese tea).

There are features of the tactics in different phases of PD, mainly concerns the first course of treatment. In the active phase is usually initially prescribed antibiotics in combination with nitrofurans, sulfonamides or nalydiksovoyu acid. In the latent phase (partial remission) may not use antibiotics, antibacterials alternating use whenever one drug.

One of the principles of treatment of CP - often (usually every 10-14 days) change antibacterials, it is due to the rapid development of resistance to these pathogens. Some chemotherapy (Biseptolum, nitroksolyn) allowed longer courses (3-4 weeks). Other drugs can be prescribed if necessary again after a two-week break.

Dose administration of antibacterial drugs and methods of administration is determined individually, depending on the nature and stage of the process of kidney function. Most patients show average therapeutic dose, which increases efficiency by a combination of drugs. In severe clinical picture and persistent that no cure pyuria, the doctor usually does not increase the dose, and chooses a more powerful antibiotic that is administered parenterally required. In patients with latent over CP also use ordinary average dose.

Currently, most hospitals plan recommended duration of treatment with antibacterial agents individually, depending on the nature of the process, timing and extent of disappearance of symptoms of exacerbation. If the clinical and laboratory manifestations of recurrent CP disappear in normal term (3-4 weeks), then supportive treatment is carried out for a few more months: within 1 month nitroksolyn (5 - NOC) or acid nalydyksova (nevigramon), and the next 1 week each month - one of the antimicrobial chemotherapy (alternating nitrofurans, sulfonamides, trimethoprim), and the next 3 weeks - infusions and decoctions of plants that have disinfectant and diuretic. Patients with rare recurrences such therapy is limited to 2 months (total duration of treatment - 3 months), and with frequent relapses continue her 3-4, sometimes 6 months.

During the apparent deterioration (active phase) latently current CP treatment is carried out as vigorously. In the phase of incomplete remission therapy can be initiated with chemotherapy (without antibiotics), alternating their 1-1,5 months continuously, then go to supporting exchange treatment. While maintaining the signs of inflammation (clinical data, changes in the blood) treatment continued for 6 months. During this period, in the absence of urinary tract obstruction is usually possible to achieve remission.

If there ynterkurentnyh diseases considered necessary to comply with the principle of "current prevention", just as it is recognizing right rheumatism, ie, at ARI, bronchitis, and acute exacerbation of chronic foci of infection (adneksit, tonsillitis, etc.). antibiotic treatment plan taking into account the associated CP, including her nitrofurans, trimethoprim, plant uroseptics.

Possible reduction in the duration of treatment of bacterial infections of the urinary tract using drugs broad antibacterial spectrum - third-generation cephalosporins.

The most important pathogenetic link CP violation is inside urodynamics and renal blood flow and immune deficiency.

In the kidney, renal blood flow affected CPs distributed unevenly hypoxia observed in the cortex and medullary flebostaz matter. To improve microcirculation recommend trental and Venoruton affecting differentiated arterial and venous microcirculation level and possess antiplatelet properties. Similar mechanisms of action of drugs with nicotinic acid Courant, ahapuryyn, Troxevasin et al.

NSAIDs should not be administered to all patients. They can be used only in the most stubborn disease course with a thorough analysis of individual efficiencies.

Criteria for appointment immunomodulyuyuchyuh tools necessary to produce a study of the clinical manifestations of the disease and the local and systemic immune factors.

Many CP patients basic therapy too slowly removes the main symptoms of the disease often falls to apply symptomatic agents. They should appoint only strict parameters. Thus, antihypertensive therapy is used in a steady increase in blood pressure and crisis, antyspastychnu - prolonged painful syndrome, caused by a urinary tract dyskinesia, sedative - with severe fatigue. During antybyotyoterapiyi show multivitamin with reduced nutrition - anabolics. In the treatment of patients in the phase of incomplete remission of great importance to physiotherapy (mineral wax and paraffin baths, phonophoresis, diathermy, electrophoresis of nicotinic acid in the lumbar region), prescribed individually according to contraindications. In addition to the anti-inflammatory action and resolving, physiotherapy influencing the local immunity, which makes this type of therapy partially pathogenic.

Pyonephrosis.

The disease is an end-stage specific or nonspecific purulent - destructive pyelonephritis. The Pyonephrosis kidney body is under purulent fusion consisting of individual cavities filled with pus, urine and tissue decay products.

Pyonephrosis always accompanied by peri-or paranephritis. Often pyonephrosis is the result of secondary chronic pyelonephritis due to urolithiasis, or other abnormalities obstructive processes in the urinary tract that runs for a long time in the active phase of inflammation, which is accompanied by frequent exacerbations. The disease occurs mainly between the ages of 30-50 years.

Symptoms and clinical course. At Pyonephrosis the appropriate lumbar region usually observed dull, aching painamplifying during acute illness. Palpation defined dense enlarged kidney with a smooth surface and restricted mobility (due paranephritis). Clinical features of pyonephrosis largely depends on the permeability of the urinary tract - when disturbed terrain rapidly increasing symptoms of septic intoxication.

For bilateral pyonephrosis typical rapid increase in symptoms of chronic renal failure. Symptom Pasternatsky weakly positive for chronic disease course and its positive during exacerbations. For Pyonephrosis characteristic intense pyuria: Urine muddy, with her standing at the bottom of the vessel formed purulent sediment, which is 1/4 the amount of urine. Severe clinical symptoms of intoxication: paleness, weakness, sweating, fatigue.

Diagnosis. At chromocystoscopy noted quick clouding drilling fluid, redness of the mucous membrane of blood vessels in the eyes of the ureter, from which, as a paste from a tube coming out thick pus; indigo on the affected side not released. Crucial for the diagnosis of pyonephrosis with radiographic methods.

On plain radiograph defined enlarged kidneys dense shade, contour lumbar muscle is absent. In X-ray diffraction patterns of excretory matter in the affected kidney or not detected or appears only in the later radiographs (1,5 -3 hours), it refers weak shapeless shadow.

In retrograde pyelogram visible dilated cavities of different sizes with irregular contours, as confirmed by ultrasound scanning, which defines the thinning of the layer of parenchyma.

Differential diagnosis is made with polikystosis and kidney tumors.

Therapy. At Pyonephrosis treatment only operative. Most often resort to nephrectomy or (at changes ureter) nefroureteroektomiyi. In patients with pyonephrosis with deep morphological and functional changes in the opposite kidney, accompanied by renal failure, sometimes falls confine palliative surgery - nephrostomy. In a rapidly weakened purulent intoxication patients often falls to resort to percutaneous nephrostomy. By improving the state performed nephrectomy.

May develop chronic inflammation in the kidney and nephrolithiasis. Therefore, these patients should be under constant medical observation.

Paranephritis. The disease is an inflammation in adipose tissue. Inflammation of the fibrous capsule of the kidney, which usually involves in the process at heavy purulent pyelonephritis, called perynefryt. Paranephritis caused by staphylococcus, E. coli and other types of microorganisms.

There are primary and secondary paranephritis.

Primary paranephritis occurs in the absence of renal disease resulting from infection by hematogenous perirenal tissue from distant foci of purulent inflammation in the body (felon, boil, osteomyelitis, pulpitis, sore throat, etc..) It promotes the lumbar region injury, hypothermia and other exogenous factors.

Secondary paranephritis . Secondary paranephritis occurs as a complication of purulent - inflammation in the kidney : in some cases, the immediate dissemination of pus foci of inflammation in the kidney (kidney carbuncle , abscess of the kidney , pyonephrosis) in perirenal fat in others (pyelonephritis) - haematogenously . Infection in perirenal fat can also get from inflammatory lesions in other organs (in parakoliti , retroperitoniti , parametriti , paratsystiti , appendicitis, kidney abscess , pleurisy , lung abscess , etc. .). Secondary paranephritis found in 80 % of cases.

Depending on the location of purulent - inflammatory foci in the perirenal tissue isolated front, back, top, bottom and total paranephritis. Often there is a rear paranephritis more abundant due to the development of fatty tissue on the posterior surface of the kidney. Paranephritis more often left-sided. Bilateral paranephritis extremely rare.

By the nature of the inflammatory process distinguish acute and chronic paranephritis. Acute paranephritis passes first stage of exudative inflammation that can undergo regression or go to the purulent stage.

If purulent process in the perirenal fat has a tendency to spread, it is usually melted fascial septum and manure goes into the weaknesses of the lumbar region - triangles and Petit Lesgafta - Hryunfelda.

With further development of the process manure beyond the perirenal tissue, retroperitoneal phlegmon form a fiber. Cellulitis can break into the intestine, peritoneal or pleural cavity, the bladder or the skin groin area, extending to the lumbar muscles, and through the locking hole - on the inner thighs.

Acute paranephritis in the initial stages of the disease has no specific symptoms begins with fever up to 39-40 ° C, chills, malaise.

Only after 3-4 days and there are more local features in the form of pain of the lumbar region of varying intensity, protective contraction of lumbar muscles during palpation of the light field on the side of the kidney disease.

A little later reveal scoliosis of the lumbar spine by reducing protective lumbar muscles characteristic of the position of the patient brought to the thigh and abdomen sharp pain in his extension through involvement in the lumbar muscles, swelling in the lumbar region, local congestion, higher leukocytosis of blood taken from the lumbar region on the side of the disease.

Obtaining pus in perirenal tissue puncture is a compelling statement paranephritis purulent, but negative studies do not exclude it.

The clinical picture of acute paranephritis largely depends on the location of the abscess, the virulence of the infection and reactivity. At the top paranefryte can develop symptoms of subdiaphragmatic abscess, acute cholecystitis, pneumonia or pleurisy.

Lower paranephritis can proceed as acute appendicitis and its complications (appendicular infiltrate lumbar abscess). At front paranephritis may experience symptoms of diseases of the digestive system.

Chronic paranephritis often occurs as a complication of chronic calculous pyelonephritis that occurs with frequent exacerbations, or are the result of acute paranephritis. It often occurs after surgical interventions on the kidney (urine uluchennya perirenal tissue) after traumatic injury of the kidney as a result of urohematomy.

Chronic paranephritis flows by type of inflammation with perirenal tissue replacement by connective tissue ("armor-plated" paranephritis) or fibrous - lipomatoz cloth. The kidney is usually detected in the infiltrate walled, woody density and large thickness, and expose it during operation can only "narrow" way.

Diagnosis. Important role in the diagnosis of acute paranephritis make radiographic methods. When X-rays can be found excursion limit movements of the diaphragm on the side of the disease. With Plain radiography define scoliosis of the lumbar spine and the lack of contour lumbar muscle. Excretory urography made during inspiration and expiration, can detect the absence or marked limitation of mobility of the affected kidney compared with healthy . Ultrasound scanning in acute purulent paranephritis clearly defines the focus of purulent melting fat , and chronic - its diverse ehostruktury . Diagnosis of chronic paranephritis much more difficult.

Treatment. In the early stages of acute paranephritis use of antibiotic therapy allows for recovery in most patients without surgery. Antibiotics advisable to combine with sulfanilamides. Spend therapy that improves immune reactivity pentoksil 6, plasma transfusion, vitamins, glucose, T - aktyvyn oppression in T - cell immunity.

Paranephritis shown in purulent surgical treatment that is lyumbotomiya, wide opening perirenal abscess and good drainage by rubber - gauze swabs. Rear angle of the wound not ushyvayut. At purulent back and bottom paranephritis acceptable performance abscess puncture under ultrasound guidance, with its drainage.

Treatment of chronic paranephritis spend the same antibacterial drugs, and acute, in combination with physiotherapy methods (diathermy, mud baths, hot tubs, etc.), As well as zahalzmitsnyuvalnymy means that resolves therapy (lidasa, aloe).

The prognosis of acute paranephritis usually favorable.

Because chronic paranephritis often a secondary complication of long flowing pyelonephritis, his prognosis is determined by the nature of the flow of the underlying disease.

Materials for methodological support of classes.

6.1. The task source for self-knowledge skills: issues, problems, tests.

Exercise .

1. Patient, 30 years old, admitted to foster ward with complaints of general weakness, fever up to 39,3 ° C, fever, dull pain in the left lumbar region. Pain and temperature over the day, connecting with cooling. What disease can be suspected?

- A. Left hand pneumonia.
- B. Acute pancreatitis.
- I. Acute gastritis.

- G. Acute pyelonephritis.
- D. intercostal neuralgia.

2 The child 2.5 years, girl. Complaints of headache, abdominal pain. The patient suffers at 12 hours, taken to hospital due to an increase in temperature to 39,3 ° C fever. Tongue dry, pulse and breathing accelerated, skin pale. On palpation of the abdomen tense muscles of the abdominal wall and right lumbar region. Blood test - leukocytes 12.0 g / l; Urinalysis - protein 0.099 g / L, white blood cells - 40-50 in sight. What is the most likely diagnosis?

- A. Acute appendicitis.
- B. dyspepsia.
- B. Acute pyelonephritis.
- G. Pneumonia.
- D. Scarlet Fever.

Tests.

1. Pyelonephritis associated with ...

- A. urolithiasis.
- B. Chronic prostatitis.
- B. stricture urethra.
- D. All of the above. (D)

2. Important part in the pathogenesis of pyelonephritis play ...

- A. The general condition of the body.
- B. Local factors.
- B. Violation of the flow of urine.
- D. All of the above. (D)

3. The differential diagnosis of acute pyelonephritis should not be held with ...

- A. Common infectious diseases (sepsis, influenza, etc.).
- B. Acute appendicitis.
- c. uterine mioma.
- G. Acute cholecystitis. (c)

4. Apostematoznyy pyelonephritis - is...

- A. purulent - inflammation
- B. Occurs mainly in the cortex of the kidney.
- B. All of the above.
- D. None of the above. (d)

5. Carbuncle of the kidney - is ...

- A. purulent - necrotic lesion formation with limited infiltration in the cortex of the kidney
- B. Weather it favorable.
- B. The course of the disease difficult.
- G. Possible self. (A)

6. Reasons for the transition of acute infectious - inflammatory process in chronic kidney to the following ...

- A. Violation of the flow of urine .
- B. Improper and insufficient duration of treatment.
- V. The formation of L - forms of bacteria and protoplasts .
- G. Ymmunodefitsytni states.
- D. Chronic comorbidities .
- G. All of the above. (G)

7. Pyonephrosis - is ..

A. End-stage specific or nonspecific purulent - destructive pyelonephritis.

B. The inflammatory process in adipose tissue navkolonyrkoviy .

B. Exudative inflammation.

G. The inflammatory process in the retroperitoneal tissue with the formation of dense fibrous tissue.

(A)

7. Materials for self-training quality.

Questions:

1. Definitions and classification of chronic pyelonephritis.

2. Etiology , pathogenesis , clinical manifestations of chronic pyelonephritis.

3. Principles of treatment of acute pyelonephritis.

4. Approach to treatment in chronic pyelonephritis.

5. Algorithm examination of the patient with chronic pyelonephritis.

6. Enumerate hostrohniyni kidney disease.

7. Etiology , pathogenesis , clinical hostrohniynyh kidney disease.

8. Which methods are most diagnostically significant at hostrohniynyh kidney disease

9. Therapeutic tactics in hostrohniynyh kidney disease ?

10. Forecast for patients with various types of non-specific inflammatory diseases of the kidney. On What factors depends the forecast ?

Problems.

1. Patient man, 27 years old, hospitalized in the urology department with complaints of pain in the left lumbar region, worse with a deep breath, fever up to 39,5 ° C with a fever in the evening. Fell ill with acute, 3 days ago when after hypothermia symptoms noted above. Three weeks ago was treated on the boil on the back. The patient is limping on his left leg, has scoliosis to the right side. Deep palpation is moderate pain in the left upper quadrant. Leukocytosis - 14 g / l, accelerated ESR - 38 mm / h, fibrinogen - 8.0 g / dL, urinalysis - no change. Plain and excretory urography contrasting shades, renal failure and flow of urine was found. What is urological disease should be suspected?

A. acute left-sided primary paranephritis.

B. left-sided acute primary pyelonephritis.

B. Necrotizing papillita left.

G. Myocardial left kidney.

D. The tumor of the left kidney. (A)

2. Patient, 32 year, complaining for permanent pain in the right abdomen, nausea, fever up to 37,5 °

C. ill for two days. On palpation tenderness in the right lumbar region and right region. In a general analysis of blood - white blood cells - 10.2 g / l, ESR - 18 mm / h In Urinalysis - leukocytes in 12-15 p / sp. What kind of disease you can think the patient has?

A. Acute pyelonephritis.

B. Acute cholecystitis.

B. Acute appendicitis.

G. Acute adneksit.

D. Premenstrual Syndrome.

3. Patient P., 22 years. In 17 years, suffered acute primary pyelonephritis with bright clinical and laboratory symptoms that ended quick recovery. After 5 years of aggravation occurred. On excretory urogram revealed deformation of the calyx of the left kidney. What does this radiographic finding? What is the diagnosis of the patient? (In patients with chronic pyelonephritis, a former

process is over. Upon elimination of the symptoms of acute pyelonephritis he secretly leaked, leading to deformation of the cavity of the kidneys).

4. Patient, 30 years old, admitted to foster ward with complaints of general weakness, fever up to 39,3 ° C, fever, dull pain in the left lumbar region. Pain and temperature over the day, connecting with cooling. What disease can be suspected?

- A. left-hand pneumonia.
- B. Acute pancreatitis.
- B. Acute gastritis.
- G. Acute pyelonephritis.
- D. intercostal neuralgia.

5. The child 2.5 years, girl. Complaints of headache, abdominal pain. The patient at 12 hours, taken to hospital due to an increase in temperature to 39 (with a fever. Tongue dry, pulse and breathing accelerated, skin pale. Palpation of the abdomen tense muscles of the abdominal wall and right lumbar region. Analysis blood - WBC 12.0 g / l urine test - protein 0.099 g / L, white blood cells - 40-50 in sight. Which is the most likely diagnosis?

- A. Acute appendicitis.
- B. dyspepsia.
- B. Acute pyelonephritis.
- G. Pneumonia.
- D. Scarlet Fever.

Tests.

1. The most informative method of diagnosing kidney carbuncle.

- A. An ultrasound of the kidneys.
- B. urography.
- B. Research glomerular filtration.
- G. Retrograde pyelography.
- J. Kidney biopsy. (A)

2. Having which number of bacteria in 1 ml of force indicates inflammation in the kidneys or urinary tract?

- A. 5000 - 10000.
- B. 10-20. (A)

3. Most frequent nonspecific inflammatory disease of the urinary organs are:

- A. pyelonephritis.
- B. retroperitoneal fibrosis.
- V. Cystitis.
- G. Pyonephrosis. (A)

4. Pyelonephritis associated with ...

- A. urolithiasis.
- B. Chronic prostatitis.
- B. stricture urethra.
- D. All of the above. (A)

5. Important role in the pathogenesis of pyelonephritis play ...

- A. The general condition of the body.
- B. Local factors.
- B. Violation of the flow of urine.

D. All of the above. (D)

6. The differential diagnosis of acute pyelonephritis should not be held with ...

A. Common infectious diseases (sepsis, influenza, etc.).

B. Acute appendicitis.

V. uterine fibroids.

G. Acute cholecystitis. (B)

7. Apostematoznyy pyelonephritis - a ...

A. purulent - inflammation

B. Occurs mainly in the cortex of the kidney.

B. All of the above.

D. None of the above. (D)

8. Carbuncle of the kidney - is ...

A. purulent - necrotic lesion formation with limited infiltration in the cortex of the kidney

B. Weather it favorable.

B. The condition easily.

G. Possible self. (A)

9. Reasons for the transition of acute infektsino - inflammation in chronic kidney to the following ...

A. Violation of the flow of urine .

B. Improper and insufficient duration of treatment.

V. The formation of L - forms of bacteria and protoplasts .

G. Immunodefytstni states.

D. Chronic comorbidities .

G. All of the above. (G)

10. Pyonephrosis - is ..

A. End-stage specific or nonspecific purulent - destructive pyelonephritis.

B. The inflammatory process in adipose tissue navkolonyrkoviy.

B. Exudative inflammation.

G. The inflammatory process in the retroperitoneal tissue with the formation of dense fibrous tissue.

(A)

1. Classroom materials for self-study.

8.1 List of study practical tasks to be performed during the practical (laboratory) classes:

1. Gather anamnesis of patients with various non-specific inflammatory diseases of the kidney.

2. Inspect the patient with chronic pyelonephritis paranephritis , pyonephrosis, evaluate clinical symptoms, physical examination data .

3. Evaluate clinical - laboratory studies in chronic pyelonephritis paranephritis , pyonephrosis : blood tests, urine.

4. Evaluate the results of X-ray and ultrasound of the kidneys.

5. Study of clinical - laboratory tests and their interpretation in different types of inflammatory diseases nonspecific led by an assistant.

6. Compilation of the study plan and scheme of possible therapy for various types of non-specific inflammatory disease.

7. Drafting independent situational problems, to better understand the issue, led by an assistant.

2. Instructional materials for acquiring professional skills

Task	Procedure	Guidelines for implementation
1	2	3
Supervision of patient	1. complaints	<p>1.1. Type and localization of pain</p> <p>1.2. The type of urination (frequency, pain, quantity of urine allocated each urination)</p> <p>1.4. The presence of hyperthermia</p> <p>1.5. Expressive weakness</p>
	2. History of the disease and life	<p>2.1 Time of pain intensity, irradiation</p> <p>2.2 Moment occurrence of hyperthermia</p> <p>2.3. Were the last kidney disease, prostate cancer, sexually transmitted diseases</p> <p>2.4. find out the presence of past complaints, diseases of other organs.</p>
	3. objective status	<p>3.1. The general condition of the patient, the adequacy of behavior, the patient's position, color and visible mucous membranes</p> <p>3.2. Pay attention to the heart rate, blood pressure, hyperthermia</p> <p>3.3. On examination of the abdomen to pay attention to in the act of breathing, symmetry, bulging bladder by heart, intensity.</p> <p>3.4. Particular attention is paid to palpation of the kidneys in three positions, the presence of symptoms Pasternatsky, percussion determination of urine in the bladder</p> <p>3.5. Macroscopic evaluation of urine</p>
	4. Evaluation of laboratory data	<p>4.1 Total blood</p> <p>4.2. Urinalysis</p> <p>4.3 Biochemical blood tests (glucose, urea, creatinine, bilirubin, fibrinogen, electrolytes)</p>
	5. Analysis of X-ray studies	<p>5.1. In obzorniy radiograph of the urinary system to evaluate the quality radiographs, the condition of the skeleton. The presence of artifacts, shadows of suspected concretions in the projection of the urinary system</p> <p>5.2. On excretory urograms, find outlines the kidneys, determine kidney function, the presence of one - or two-way hidronefrosis.</p>
	6. Evaluation of	6.1. Ultrasound capabilities of the

	instrumental methods	method 6.2. Chromocystoscopy 6.3. Radioisotope renography.
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9.1 Methods of work, stages of progress.

10. Materials for self-mastery of knowledge, skills provided by this work.

10.1. different tests levels.

11. The topic of the next session.

12. The challenge for UDRS and NIRS on the topic of the next session.

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Recommended literature.

Basic:

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4. Sarychev L.P. Symptoms of urological diseases: method. rec. For teachers / L. P. Sarychev, S. M. Suprunenko, S. A. Sukhomlyn, Ya. V. Sarychev. – Poltava, 2019.
5. O.V., Lyulko, O.F. Voizianov Textbook "Urology" 3rd edition. Thresholds Dnipropetrovsk. - 2012 p.
6. "Urology (Methodical development of practical classes for students)" edited by Professor V.P. Stus, second edition, supplemented. / A.P. Stus, Moiseenko M.M., Fridberg A.M., Pollion M.Yu., Barannik K.S., Suvaryan A.L., Krasnov V.M., Kryzhanivskiy O.Yu. - Dnipro: Accent LLC. - 2018. - 336c.
7. Urology: textbook for students. higher med. academic established: translation from Ukrainian publications / S.P. Pasechnikov, S.A. Voizianov, V.N. Lesovoy, F.I. Kostev, V.P. Stus, et al./ Ed. S.P. Pasechnikov - Edition 2. - Vinnytsia: Novaya Knyga, 2015. - 456 p.: illustr.
8. Urology: textbook for students of higher medical education Institutions /S.P. Pasechnikov, S.O. Voizianov, V.M. Lesovoy (et at.); ed. by Pasechnikov. / S.P. Pasechnikov, S.O. Voizianov, V.M. Lesovoy (et at.) - Vinnytsia: Nova Knyha, 2016. - 400 p.
9. EAU Guidelines, edition presented at the 28th EAU Annual Congress, Milan 2021. ISBN 978-90-79754-71-7. EAU Guidelines Office, Arnhem, The Netherlands.
10. Alan W. Partin, Alan J. Wein, et. all - Campbell Walsh Wein Urology, E-Book (12th ed.) – 2020.

11. Omar M. Aboumarzouk - Blandy's Urology, 3rd Edition – 2019.
12. David Thurtle, Suzanne Biers, Michal Sut, James Armitage. - Emergencies in Urology – 2017.
4. Philipp Dahm, Roger Dmochowski - Evidence-based Urology, 2nd Edition – 2018.

Additional:

1. Boyko M.I., Pasechnikov S.P., Stus V.P. and others Clinical andrology // Doctor's guide "Androlog". - K.: LLC "Library "Health of Ukraine", 2013. - 222 p.
2. Sarychev L.P. Clinical anatomy and physiology of organs of the urinary and male reproductive system: method. rec. for teachers / comp. L. P. Sarychev, S. A. Sukhomlyn, S. M. Suprunenko. – Poltava, 2019. – 11 p.
3. Sarychev L.P. Symptoms of urological diseases: method. rec. for teachers / L. P. Sarychev, S. M. Suprunenko, S. A. Sukhomlyn, Ya. V. Sarychev. – Poltava, 2019. – 14 p.
4. Medical student's library. Urology. Edited by F.I. Kosteva. - Odesa, 2004. – 296p.
5. Atlas-guide to urology. Ed. A.F. Vozianova, A.V. Lulko Dnipropetrovsk, 2002.-T. 1,2,3
6. Urology / Ed. Prof. O.S. Fedoruk - Chernivtsi: Bukovyna State Medical University, 2011. - 344p.

Information resources:

University website <https://onmedu.edu.ua>

Library library.odmu.edu.ua

1. <https://uroweb.org/>

2. <https://www.nccn.org/>

3. <https://www.auanet.org>

4. <https://www.inurol.kiev.ua/>

5. <https://www.souu.org.ua/>