

VARIANTS OF THE COURSE OF CHRONIC PYELONEPHRITIS. MEDICAL AND SOCIAL EXAMINATION, REHABILITATION

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Abstract

Pyelonephritis is a non-specific infectious inflammatory disease of the kidneys that affects the renal parenchyma (mainly interstitial tissue), pelvis and calyces.

Keywords: Tubulointerstitium , prostaglandins , Escherichia coli, renal pelvis.

Introduction

Chronic pyelonephritis is a chronic non-specific infectious and inflammatory disease of the kidneys, initially developing in the renal pelvis and calyces (RPS) and subsequently spreading to the tubulointerstitium (medulla) and renal cortex.

Etiology of chronic pyelonephritis: gram-negative bacteria of the intestinal group (Escherichia coli , Proteus mirabilis), Enterococcus spp ., Staphylococcus spp ., Streptococcus spp ., Pseudomonas aeruginosae , mixed flora.

Pathogenesis of chronic pyelonephritis:

1. Ways of kidney infection:

a) urogenic (ascending) - the main route, predominates in chronic pyelonephritis and in women

b) hematogenous - against the background of sepsis or episodes of bacteremia, predominates in acute pyelonephritis and in men

The most common patients are: children under 7 years of age (due to anatomical features of the development of the genitourinary system; girls and women aged 18-30 with the onset of sexual activity, pregnancy or childbirth; women during menopause (with a decrease in estrogen levels, the vaginal flora changes - a decrease in the number of lactobacilli and their replacement with E. coli); elderly men (BPH); men and women with urolithiasis.

2. Contributing factors: ICD; abnormalities in the development of the urinary system, nephroptosis; BPH; inflammatory diseases of nearby organs (colitis, adnexitis, appendicitis, prostatitis); general diseases (diabetes, obesity); pregnancy; functional disorders of the urinary tract (vesicoureteral reflux), especially with an overflowing bladder.

3. Reasons for the transition of acute pyelonephritis to chronic:

a) existing causes of urinary outflow obstruction

b) incorrect or insufficient treatment of acute pyelonephritis

c) the formation of L-forms of bacteria that can persist in the body for a long time



d) chronic concomitant diseases (diabetes mellitus, obesity, gastrointestinal diseases, tonsillitis, etc.)

d) immunodeficiency states

Phases of chronic pyelonephritis :

- 1) exacerbation (active inflammatory process)
- 2) latent phase
- 3) remission (clinical recovery)

Each subsequent exacerbation of pyelonephritis is accompanied by the involvement of new areas of the functioning renal parenchyma in the inflammatory process, which are then replaced by scar connective tissue, which ultimately leads to a secondary shrunken kidney, and in the case of a bilateral process, to chronic renal failure.

Clinical manifestations of chronic pyelonephritis:

Subjectively - general complaints: weakness, decreased performance, appetite, headaches and specific:

- pain in the lumbar region, often one-sided, aching in nature, less often intense; can radiate to the lower abdomen, genitals, thigh
- dysuric phenomena (painful frequent urination due to concomitant cystitis, moderate polyuria due to damage to the tubules)
- the release of cloudy urine, sometimes with an unpleasant odor, which produces a cloudy sediment when left to stand
- chills during severe exacerbation, sometimes transient rises in body temperature to 38.5-39° C with normalization by morning
- increased blood pressure, headaches, dizziness (hypertension due to decreased production of depressant prostaglandins in the renal medulla)

Objectively :

- paleness of the skin and visible mucous membranes
- facial puffiness (but severe swelling is not typical for chronic pyelonephritis)
- pain when palpating or tapping the lumbar region (often one-sided)

Tofilo's symptom - in a supine position, the patient bends the leg at the hip joint and presses the thigh to the stomach; in the presence of pyelonephritis, the pain in the lumbar region increases, especially if you take a deep breath

- enlargement of the left border of the heart, muffled tones, soft systolic murmur at the apex (signs of hypertension)

- with disease progression - clinical picture of chronic renal failure, which is characterized by a greater decrease in renal function during periods of exacerbation (with increased temperature, pyuria, increased percentage of active leukocytes) and some restoration of renal function (sometimes even with an increase in the relative density of urine and improvement of biochemical parameters) with the subsidence of the inflammatory process under the influence of treatment

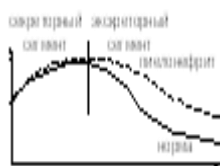


Clinical forms of chronic pyelonephritis:

- a) **latent form** – scanty clinical symptoms, patients are bothered by unmotivated weakness, chills, sometimes nocturia and mild pain in the lumbar region
- b) **recurrent form** – alternating periods of exacerbation and remission; during the period of exacerbation, the clinical and laboratory data are clear, in the remission phase, the clinical and laboratory manifestations of the disease gradually subside
- c) **hypertensive form** – the clinical picture is dominated by the AG syndrome
- d) **anemic form** – anemic syndrome predominates in the clinic (due to impaired erythropoietin production)
- d) **septic form** - develops during a period of very pronounced exacerbation, characterized by high body temperature, severe chills, severe intoxication, hyperleukocytosis, and often bacteremia.
- e) **hematuric form** - macrohematuria comes to the fore in the clinical picture

Diagnosis of chronic pyelonephritis:**1. Instrumental research**

- a) general radiography of the renal area: decrease in the size of the kidneys on one or both sides.
- b) X-ray urological examination:
- 1) excretory urography - reveals decreased tone of the upper urinary tract, flattening and rounding of the fornix angles, narrowing and elongation of the calyces, later - deformation and convergence of the calyces, pyelorenal reflux, pyelectasis, asymmetry of kidney size; an increase in the renal - cortical index (normal 0.37-0.4), Hudson's sign (a decrease in the thickness of the renal parenchyma at the poles compared to its thickness in the middle part)
 - 2) retrograde pyelography - determines the deformation of the renal pelvis and calyces, and may reveal congenital anomalies of the kidneys
- c) chromocystoscopy : impaired excretory function of the kidneys on both or one side.
- d) radioisotope renography: asymmetry in kidney damage, disruption of the excretory segment.
- d) radioisotope scanning of the kidneys: asymmetry of kidney size, diffuse nature of changes.
- e) ultrasound examination of the kidneys: asymmetry of kidney size, expansion and deformation of the renal pelvis, diffuse acoustic heterogeneity of the renal parenchyma, compaction of the renal papillae, shadows in the renal pelvis (sand, small stones, sclerosis of the papillae), unevenness of the kidney contour, sometimes a decrease in the thickness of the parenchyma.

**2. Laboratory tests :**

- a) OAK: signs of anemia, leukocytosis, left shift in blood count and toxic granularity of neutrophils (in severe exacerbation), increased ESR.



b) General urine analysis: urine is turbid, alkaline reaction, decreased urine density; moderate proteinuria, microhematuria, pronounced leukocyturia, possible cylindruria, bacteriuria (more than 100,000 microbial bodies in 1 ml of urine)

c) Nechiporenko test (determination of the content of leukocytes and erythrocytes in 1 ml of urine) - predominance of leukocyturia over erythrocyturia (normally the number of leukocytes in 1 ml does not exceed 4 thousand, erythrocytes - 2 thousand)

Zimnitsky test - decrease in urine density during the day (normally urine density during the day fluctuates from 1010 to 1025 g/l)

d) BAC: increased content of sialic acids, fibrin, seromucoid, α_2 - and γ -globulins, creatinine and urea (with the development of chronic renal failure), the appearance of CRP.

e) prednisolone test - used to detect latent pyuria and active inflammatory process in the renal parenchyma (under the influence of GCS, only "active", "live" leukocytes leave the site of inflammation and appear in the urine); in the morning, the patient collects a middle portion of urine (control), then 30 mg of prednisolone in 10 ml of saline solution is administered intravenously and the middle portion of urine is collected for analysis three times at hourly intervals; in each portion, the number of bacteria, formed elements and "active" leukocytes in 1 ml of urine is determined; the test is positive if at least in one portion the number of leukocytes doubles and active leukocytes appear.

g) urine test according to Sternheimer-Malbin - supravital staining of urine with gentian violet and safronin is performed; in the absence of infection in the urinary tract, the protoplasm of urine leukocytes is stained dark blue, the nuclei are red, in the presence of chronic pyelonephritis, "pale" leukocytes with pale blue protoplasm and pale blue nucleus, enlarged in size, multi-lobed nucleus, granularity in the cytoplasm (Sternheimer-Malbin cells - live, active leukocytes from the site of inflammation in the renal tissue)

Principles of treatment of chronic pyelonephritis.

The main tasks in the treatment of pyelonephritis are: 1) elimination of the causes that caused the violation of urine passage or renal blood circulation; 2) prescription of antibacterial or chemotherapeutic drugs taking into account the data of the antibiogram; 3) increasing the immune reactivity of the body.

1. Drink plenty of fluids (urine volume not less than 2 l/day), limit liquids only if there is difficulty in urine outflow; in case of exacerbation, hypertension – limit salt to 4 g/day

2. Sanitation of foci of chronic infection (tonsillitis, caries, cholecystitis, adnexitis, etc.)

3. Etiotropic therapy: - AB: beta-lactam (penicillin, amoxicillin/ clavulanate, cephalosporins of the second and third generations), macrolides (azithromycin, clarithromycin, spiramycin), fluoroquinolones (norfloxacin, ofloxacin, ciprofloxacin, lomefloxacin, levofloxacin)

- uroseptics: sulfonamides: co-trimoxazole (bactrim, biseptol), nitrofurans (furagin, furadonin)

4. Phytotherapy:

- diuretic effect is possessed by: bearberry, lingonberry leaf, horsetail, strawberry, juniper berries, chamomile, parsley herb and root

- anti-inflammatory effect is possessed by: St. John's wort, birch leaves and buds, plantain, calendula, eucalyptus, cranberries, lingonberries, chamomile.



Etiotropic therapy - until the bacteria disappear, then intermittent antibacterial therapy for 3-6 months (10 days each month), in the intervals between cycles (the remaining 20 days) - medicinal herbs.

5. Symptomatic treatment (antihypertensive drugs, etc.).
6. Physiotherapeutic treatment: electrophoresis of furadonin , erythromycin, calcium chloride on the kidney area; UHF; thermal procedures.
7. Sanatorium and spa treatment during the remission phase at drinking springs (the main factor is mineral water taken internally and in the form of baths)
8. Surgical treatment is indicated for renal abscess and severe, removable urodynamic disorders . Treatment of severe exacerbation of chronic pyelonephritis : intravenous or intramuscular cephalosporins of the second and third generations, aminoglycosides, fluoroquinolones (pefloxacin , ofloxacin , ciprofloxacin), aminopenicillins with β - lactamase inhibitors ; in septic conditions accompanying pyelonephritis - carbapenems (tienam or meropenem 500 mg 3 times a day). Medical and social expertise : general terms of VN from 12-16 days for mild form to 30-45 days for severe form of exacerbation of CRF.

Rehabilitation : diet, sanitation of infection foci, planned anti-relapse therapy, multivitamin therapy , spa treatment (the main therapeutic factor is mineral waters taken orally and in the form of baths - resorts Zheleznovodsk, Truskavets, Slavyanovsky and Smirnovsky mineral springs)

References

1. Mukhin N.A. Modern problems of nephrological patients // Doctor. - 2007; 6: 7–8.
2. Mukhin N.A., Tareeva I.E., Shilov E.M. Diagnostics and treatment of kidney diseases. – M., 2002. – 381 p.
3. Obukhovets T.T. Nursing in therapy. Workshop. - Rostov -on-Don, 2002. - 352 p.
4. Serov V.V., Pal'tsev N.A., Mukhin N.A. et al . Key problems of glomerulonephritis // Ter. archive. - 1992; 6: 5–10.

