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## CURRENT FEATURES OF CHRONIC PYELONEPHRITIS IN WOMEN OF FETURAL AGE

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#### Resume,

Pyelonephritis takes the second place in frequency after acute respiratory diseases, the first place in the structure of kidney pathology and is more often registered in women of working age. The frequency of pyelonephritis during pregnancy ranges from 12.2 to 33.8% and has a tendency to progressive growth. Among adolescents, the frequency of pyelonephritis reaches 37%. In 70.4% of women with pyelonephritis, various complications are observed during pregnancy, and in 75.2% of women during childbirth.

Keywords: chronic pyelonephritis in women of fetural age, women during childbirth.

## ТУГРУК ЁШИДАГИ АЁЛЛАРДА ХРОНИК ПИЕЛОНЕФРИТНИНГ АКТУАЛ МУАММОЛАРИ

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## Резюме,

Пиелонефрит ўткир респиратор касалликлардан кейин частотада иккинчи ўринни эгаллайди, буйрак патологиялари таркибида биринчи ўрин бўлиб, мехнатга лаёкатли аёлларда кўп кайд этилади. Хомиладорлик даврида пиелонефритнинг учраш эхтимоли 12,2% дан 33,8% гача ва прогрессив ўсиш тенденциясига эга. Усмирлар орасида пиелонефритнинг учраш эхтимоллик даражаси 37% га етади. Пиелонефрит билан огриган аёлларнинг 70,4 фоизида хомиладорлик пайтида турли тугрук муаммолари, 75,2 фоиз аёлларда эса тугилиш жараёнида муаммолар кузатилади.

Калит сўзлар: аёлларда хроник пиелонефритнинг актуал муаммолари, туғилиш жараёнида муаммолар.

## АКТУАЛЬНЫЕ ОСОБЕННОСТИ ХРОНИЧЕСКОГО ПИЕЛОНЕФРИТА У ЖЕНЩИН ДЕТОРОДНОГО ВОЗРАСТА

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#### Резюме.

Пиелонефрит занимает второе место по частоте после острых респираторных заболеваний, первое место - в структуре патологии почек и чаще регистрируется у женщин трудоспособного возраста. Частота пиелонефрита при беременности колеблется от 12,2 до 33,8% и имеет тенденцию к прогрессирующему росту. Среди подрост-ков частота пиелонефрита достигает 37%. У 70,4% женщин страдающих пиелонефритом наблюдаются различные осложнения во время беременности, а у 75,2% -во время родов.

Ключевые слова: особенности хронического пиелонефрита у женщин детородного возраста, различные осложнения во время беременности.

#### Relevance

yelonephritis ranks second in frequency after acute respiratory diseases, first place in the structure of the pathology of the kidneys and is more often recorded in women of working age. The frequency of pyelonephritis during pregnancy ranges from 12.2 to 33.8% and has a tendency to progressive growth. Among undergrowth, the frequency of pyelonephritis reaches 37%. In 70.4% of women suffering from pyelonephritis, various complications are observed during pregnancy, and in 75.2% during childbirth.

Pyelonephritis (PN) is one of the most common kidney diseases in pregnant women. PN is an inflammatory

process in the kidney with a predominant lesion of the interstitial tissue, due to a specific bacterial infection, involving the pelvis and calvx in the process. The inflammatory process can be observed during pregnancy. childbirth and in the postpartum period.

Two main factors contribute to the onset and development of PN in pregnant women and puerperas: an infectious focus in the body and a violation of the urodynamics of the upper urinary tract (MVP). Clinical diagnosis of PN in pregnant women requires the use of methods to determine the function of the urinary system, the presence and concentration of microorganisms in the urine, their pathogenicity and sensitivity to antibacterial





drugs, necessary for diagnosis and rational treatment tactics.

During pregnancy and childbirth, under the influence of mechanical, neurohumoral and endocrine factors, complex anatomical and functional changes occur in the urinary organs, aimed at ensuring the normal process of pregnancy. The frequency of manifestation of PN in pregnant women ranges from 10.8 to 28.3% and has a tendency to increase.

In a number of publications, there has been a continued increase in the number of infectious and inflammatory diseases of MVP, including PN, detected in 15% of young people. These problems are relevant from the standpoint of modern obstetrics, which has a perinatal orientation, due to the fact that the disease most often manifests itself during pregnancy, leads to a complicated pregnancy and high morbidity in newborns due to intrauterine infection of the fetus and the development of placental insufficiency.

According to some authors, that not only PN complicates the course of pregnancy, but also pregnancy negatively affects the course of the inflammatory process in the kidneys, with up to 1/3 of cases exacerbating it. A progressing pregnancy can lead to an exacerbation of PN, an increase in attacks of renal colic, and deterioration of the function of a single kidney in women who have undergone nephrectomy. The combination of P.N. and pregnancy increases the risk of developing postpartum purulent-inflammatory diseases (HS), developing in 14-27.8% of puerperas. There are three degrees of risk of complications in PN, depending on the available clinical symptoms - hypertension, azotemia, duration of the disease and degree of kidney damage. For the first degree of this risk, the development of PN during pregnancy is characteristic, while pregnancy and childbirth are quite safe. At the II degree of risk, there is an uncomplicated chronic PN that existed before pregnancy, the frequency of development of pregnancy complications is from 20 to 50% (threatened termination, HBV, placental insufficiency of varying severity). Preserved renal function, the absence of hypertensive syndrome. Despite exacerbations of PN during pregnancy, catheterization of the ureters or kidney surgery, pregnancy can be saved. If there is a III degree of risk, in which there are PN with hypertension, chronic renal failure (CRF), PN of a single kidney, pregnancy is contraindicated in view of the possible development of severe forms of preeclampsia, progression of CRF. In the presence of a single kidney and the development of PN, pregnancy is permissible only if its function is good, and if kidney function deteriorates, termination of pregnancy regardless of gestational age.

## Etiology and pathogenesis

The occurrence and development of PN in pregnant women and puerperas is due to the presence of two main factors: an infectious focus in the body and a violation of the urodynamics of the upper MEP.

According to the unanimous opinion of urologists, PN of pregnant women (gestational pyelonephritis), as well as pyelonephritis due to various obstructive uropathies, belong to the category of complicated infections of the upper MVP, which often turn into severe purulent-inflammatory diseases of the postpartum period.

The most common pathogens of the inflammatory process in the kidneys are microorganisms that normally exist in the gastrointestinal tract, organs of the urinary

system, and the lower parts of the female genital organs.

It was revealed that viruses, genital mycoplasmas, chlamydia and fungi can also initiate the development of PN. It is known that in recurrent infections of MVP, the vagina of women is more often colonized by uropathogenic microorganisms. According to P. Goluszko, in 52% of inoculations of the vaginal contents in women with recurrent urinary infection, gram-negative bacteria are isolated, whereas in patients without this pathology they are detected in only 24% of cases. In addition, there is a high vaginal colonization of E. coli, E. faecalis, Klebsiella.

Despite a significant number of studies on PN, its etiology and pathogenesis in pregnant women continue to be the subject of study. Until now, the significance of factors contributing to the development of PN during ascending infection has not been completely resolved. It is known that the following factors are the basis of the mechanism of its development: anatomical and functional features of female MVPs; violation of the urodynamics of the upper MVP; the presence of asymptomatic bacteriuria in a pregnant and asymptomatic bacteriospermia in a husband; the presence of infectious diseases during pregnancy and chronic foci of infection in the body.

Hormonal discorrelations during pregnancy are accompanied by impaired bladder function - decreased tone, increased capacity, impaired urination, impairing urine evacuation from the upper MEP. In pregnant women with PN, the level of hormones in the blood significantly exceeds the same parameters in healthy pregnant women.

J. Delzell et al. emphasize that from early pregnancy (from the 6th week) and in its second half (20-22 weeks), almost 90% of women have enlarged ureteral lumens that persist until delivery. In view of the increase in the uterus by more than 50 times during full-term pregnancy, an additional factor of compression of the MEP by the pregnant uterus appears, which contributes to the development or exacerbation of the existing chronic P.N. An increased volume of the bladder and a decrease in its tone, as well as the tone of the ureters, contribute to stagnation of urine, the occurrence of uretero-cystic reflux and hydronephrosis. Along with this, a physiological increase in blood plasma during pregnancy is accompanied by a decrease in urine concentration. 70% of pregnant women develop glucosuria, leading to an increase in the bacterial flora in the urine, and an increase in the content of progestogens and estrogens in the urine leads to a decrease in the resistance of the lower MVP epithelium to invasion of microorganisms. An increase in the content of placental and fetal hormones in the blood contributes to changes in the tone of the ureters, renal pelvis and causes a violation of urodynamics long before the appearance of mechanical factors.

Purpose of the study. To study the characteristics of the onset, clinical course of chronic pyelonephritis (CP) in women of childbearing age.

#### Material and methods

20 women aged 17-40 years were surveyed (on average  $25.3 \pm 3.4$  years). 60% of patients with CP are most often diagnosed between the ages of 21 and 30 years. The plan for the study of patients included finding out complaints, collecting data on the reproductive history of life and disease, examining patients, testing blood and urine, and functional and instrumental examination of the kidneys. The clinical picture of the recurrent form was

characterized by specific symptoms of pyelonephritis: pain in the kidney area radiating to the lower abdomen in 7 patients (46.7%), pain and pain during urination in 8 patients (53%), frequent urination in 12 women (80%), fever with chills in 13 patients (86.7%). In the anemic form of pyelonephritis, signs of the anemic syndrome prevailed - weakness, headaches, dizziness, decreased performance. The specific symptoms are pain in the lumbar region of the aching nature in 3 patients (60%) and mild dysuric disorders in 4 patients (80%). All women had an anemia of the hypochromic type, leukocytosis and accelerated ESR.

Clinical manifestations

Most often, PN develops in pregnant women (48%), less often in puerperas (35%) and women in labor (17%). Gestational P.N. occurs on average at 12.2-17%, reaching 33% in the high-risk group. Most often (about 50% of women), it develops in the second trimester of pregnancy, in 20% - in the first trimester and in 30% in the second trimester. PN develops more often in the right kidney (up to 80%), 15% have a bilateral process. The clinical manifestations of PN in pregnant and nonpregnant women do not differ.

Chronic PN has a tendency to a relapsing clinical course: periods of exacerbation of the disease alternate with periods of remission. For many years, the disease can occur latently, exacerbating during acute intercurrent infections, during pregnancy, or for a long time without manifesting itself. Clinical examination in 1/3 of patients with chronic PN failed to detect signs of the inflammatory process in the MEP.

In pregnant women, the clinical signs of chronic PN can be superimposed on symptoms associated with pregnancy complications provoked by the disease or developed independently. For example, pain in the lumbar region with radiation to the inguinal region and lower abdomen may be associated with an increase in uterine tone with the threat of termination of pregnancy; proteinuria, hypertension, edematous syndrome may indicate the attachment of gestosis; leukocyturia can be a sign of infection of the lower parts of the genital tract, and prolonged subfebrile condition in the early stages of pregnancy is often characteristic of the physiological course of pregnancy. These signs complicate the clinical diagnosis of PN in pregnant women, which encourages the use of highly informative and sensitive methods of diagnosis.

For "pure" forms of PN, edema is uncharacteristic; Blood pressure is normal, with the exception of severe cases, accompanied by secondary hypertension; diuresis is sufficient. When combined with preeclampsia, edema occurs in 90% of women, blood pressure rises to significant numbers, there is pronounced proteinuria, with ophthalmoscopy, deep fundus changes are found: angioretinopathy, neuroretinopathy, hemorrhages with retinal edema.

An exacerbation of chronic PN during pregnancy necessitates careful monitoring by a doctor, an in-depth and detailed collection of anamnesis, and an extension of the diagnostic search, since there is often an erased clinical

Results of the study: recurrent form was diagnosed in 15 women (75.0%) and the anemic form of the disease in 5 patients (25.0%). According to the survey, untimely emptying of urine after urge was found in 15 patients (75%), non-use of hygienic toilet paper in 14 patients

(70%), improper hygiene after defecation of the collecting organs in 18 women (90%). The detection of concomitant pathology revealed: chronic cystitis in 70%, chronic endometritis in 29.4%, chronic ofaritis in 5.8%, chronic tonsillitis and sinusitis in 40%, chronic bronchitis in 15% of cases. pain in the kidney area with irradiation to the lower abdomen in 7 patients (46.7%), pain and pain during urination in 8 patients (53%), frequent urination in 12 women (80%), fever with chills in 13 patients (86.7%). In the anemic form of pyelonephritis, signs of the anemic syndrome prevailed - weakness, headaches, dizziness, decreased performance. The specific symptoms are pain in the lumbar region of the aching nature in 3 patients (60%) and mild dysuric disorders in 4 patients (80%). All women had an anemia of the hypochromic type, leukocytosis and accelerated ESR. An increase in blood creatinine was diagnosed in 8 women (40%). Proteinuria was detected in 12 patients (60%). According to the ultrasound, the following features were identified: an increase in the size of the kidneys in 15%, partial deformity in 25%, and an abnormal development of the kidneys in 14.7% of patients.

# **Diagnostics**

To improve the diagnosis of diseases of the urinary system by leading obstetricians, an algorithm for examining sick women has been developed and implemented in obstetric institutions of the country, which is based on the assessment of anamnestic data, traditional clinical and laboratory parameters, microbiological studies, ultrasound scanning of the kidneys, magnetic resonance imaging, urography, endoscopic and radiological (if necessary) data, as well as monitoring the status of the mother-parasite system nta is the fetus.

One of the first places is the study of urine, which allows to study the concentration and excretory ability of the kidneys according to the results of the Zimnitsky test. In chronic PN there are isohypostenuria, nocturia and polyuria. When the kidneys are wrinkled, scarring, and the inflammatory process subsides, the low relative density of urine may be the only sign of the disease.

To assess the state of glomerular filtration and tubular reabsorption in kidney diseases, a Reberg test is used to study renal blood flow.

In the differential diagnosis of kidney diseases, especially during sluggish pathological processes, quantitative methods for calculating the formed elements of urine (the content of red blood cells and white blood cells and their ratio) are important, for this the Nechiporenko method is most often used.

The excretion of microorganisms from urine depends on the severity of the inflammatory process, the duration of the disease, the presence of factors that violate the passage of urine, preceding antibiotic treatment, previous surgical interventions and instrumental studies.

For the diagnosis of renal pathology, it is important to determine the total protein and protein fractions, cholesterol, blood electrolytes, acid-base state, azotemia. A biochemical blood test reveals hypoproteinemia and dysproteinemia due to a decrease in the content of albumin and an increase in the level of globulins, a short-term and moderate increase in the concentration of urea and creatinine, indicating impaired renal function.

In the diagnosis of inflammatory diseases of various organs, including MVP, in recent years, the determination of cytokine levels has been used - proteins produced mainly by activated cells of the immune system, lacking specificity for antigens and mediating cell-cell interactions in the immune response, hematopoiesis, inflammation.

One of the methods for diagnosing the inflammatory process in the kidneys at the initial stages of the examination is thermography, which is a non-invasive method and consists in registering an increase in body temperature in the area of the affected organ. This method can be used as a method of rapid diagnosis, which allows us to differentiate kidney pathology from diseases of other organs already in the early stages of the disease, as well as a test that determines further targeted examination of patients and provides control over the effectiveness of treatment. However, thermography does not reveal the cause and nature of kidney damage.

The complex of a standard examination of pregnant women and women in childbirth with diseases of the MEP includes ultrasound scanning (ultrasonography). The study allows you to determine the thickness of the cortical layer, the size of the kidney and pyelocaliceal system (CHS), to identify malformations and neoplasms of the kidneys, to establish the presence of urolithiasis, hydronephrosis and other pathologies. The method is safe for mother and fetus and can be used repeatedly during pregnancy.

In modern medicine, the method of magnetic resonance imaging (MRI) is widely used to diagnose many diseases, including urological ones. The criteria for an MRI of the kidneys during pregnancy are as follows: the presence of abnormalities of the MEP; frequent exacerbations of infectious and inflammatory kidney diseases during pregnancy; suspicion of the formation of severe complications in the form of carbuncle, apostematous pyelonephritis; the need to assess the functional state of the kidneys.

## **Findings:**

- 1. Chronic pyelonephritis is most often diagnosed in women aged 21-30 years.
- 2. The presence of focal infection is a factor in the development of pyelonephritis.
- 3. In 40% of cases, CP is the cause of chronic renal failure.

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