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THE ROLE OF A NURSE IN THE PREVENTION OF CHRONIC PYELONEPHRITIS AND ITS IMPACT ON HEALTH

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Abstract
Chronic pyelonephritis (CP) is an infection of the renal parenchyma that is usually associated with systemic signs of inflammation, since the presence of fever is usually an indicator of renal damage. The kidneys and urinary tract are usually free of germs. Most cases of CP result from passage of fecal-derived organisms through the urethra and periurethral tissues into the bladder with subsequent invasion of the kidney. Normally, urine drainage prevents infection by washing away bacteria that enter the urinary tract.

Keywords: Urinary tract infection, pyelonephritis, risk factors, prevention.

INTRODUCTION

Urinary tract infection is one of the most pressing medical and social problems. Currently, there is an increase in the incidence of progressive forms of renal infection. To date, the issue of identifying the source of infection and determining the true causative agent of pyelonephritis, criteria for early diagnostics of renal infection, and basic therapy of pyelonephritis remains unresolved. Success in the diagnosis and treatment of pyelonephritis largely depends on the depth and accuracy of knowledge about the etiology and mechanisms of development of renal infection. Pyelonephritis is a non-specific infectious and inflammatory disease with predominant damage to the tubulointerstitial tissue and involvement of the renal pelvis and calyces, blood vessels and lymphatic vessels [1]. One of the most common infectious diseases are urinary tract infections. Of all kidney diseases, acute pyelonephritis accounts for 14%, of which purulent forms of this disease develop in every third [1,2]. Pyelonephritis is the most common cause of hospitalization of patients with urinary tract infections. Pyelonephritis affects all age groups of the population, which makes it even more relevant. The cause of pyelonephritis is an infection, most often caused by bacteria. The main pathogens of pyelonephritis are: Enterobacter spp. (28.5%), Proteus spp. (16.7%), E. coli (15.8%), P. aeruginosa (22.4%), Staphylococcus spp. (11.6%), Enterococcus spp. (5.2%) [2,3]. According to WHO, diseases of the urinary system (US), currently occupy 2nd place among the main forms of clinical pathology. The cause of the protracted and recurrent course of chronic pyelonephritis is the formation of an immunodeficiency state, which is formed as a result of the suppression of the activity of the thymus gland and the areas of peripheral lymph nodes (lymph

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nodes) under its influence by infectious agents. ntercurrent diseases such as tonsillitis, recurrent acute respiratory viral infections, and anemia, which are often preceding factors in the exacerbation of chronic pyelonephritis, also lead to similar suppression of the functioning of the lymphatic system. The phrase chronic pyelonephritis is not actually a single diagnosis. It refers to long-term damage to the kidney drainage system caused by recurrent urinary infection [2]. Chronic pyelonephritis is a genetically determined immune infection-mediated ascending nonspecific focal inflammation of predominantly tubulointerstitial tissue in combination with damage to the urinary tract. It is based on a genetically determined disorder of local immunity, leading to increased sensitivity to certain pathogens, disruption of urodynamics and the development of inflammation affecting all structures of the renal tissue and the mucous membrane of the urinary tract [3,4]. Pyelonephritis is considered a non-specific infectious and inflammatory disease of the interstitial tissue of the renal parenchyma and the renal pelvic system. There are three main variants of the disease: acute; chronic; chronic with exacerbation. Chronic pyelonephritis is a common disease among the population, affecting 6-30% of people according to autopsy data and half of all kidney diseases. The incidence is 18 cases per 1000 people per year. Unfavorable bacteriuria occurs in 0.5% of men, 2.5% of women, 7.5% of women and 5.5% of pregnant women. In women, this disease is observed 2-5 times more often than in men. In 10-20% of patients with chronic pyelonephritis, chronic renal failure develops, and in 10%, severe arterial hypertension [5,6]. The most frequent (11.1%) and serious urological diseases are urinary tract infections. In all age groups, pyelonephritis is the most common kidney disease and ranks 2nd in the structure of nosologies among urological diseases. This nosology occupies an important place among the causes of primary disability and fatal outcomes [7,8]. As early as 1976, V.S. Karpenko and A.S. Pereverzev noted that inflammatory diseases of the upper urinary tract and especially their purulent forms are a real scourge of modern urology. In their opinion, this problem, as in focus, refracts the issues of purulent infection and pharmacotherapy, drug allergy and hypertension, chronic renal failure and organ transplantation. This position remains relevant today [10]. In modern nephrology manuals, one can find various definitions of pyslonephritis (PN). In this regard, it falls into the group of urinary tract infections (UTI), then into the group of interstitial kidney lesions. In modern nephrology manuals, one can find various definitions of the causative agents of pyelonephritis. In this regard, it falls into the group of urinary tract infections. The relevance of the problem of chronic pyelonephritis is due not only to its widespread prevalence, but also to a noticeable change in the clinical picture over the past two decades. The number of latent forms has increased significantly (2-2.5 times), complete remission and cure of even low-symptom forms rarely occurs. However, the incidence of pyelonephritis among men increases after 40 years of age, which in most cases is associated with the development of benign prostatic hyperplasia [11,12]. In the last decade, there has been a clear trend towards an increase in the number and rejuvenation of those suffering from pyelonephritis. In the structure of kidney and urinary tract infections, pyelonephritis firmly occupies the first place. When comparing the primary disability rates for the main groups of urological diseases, chronic pyelonephritis ranks 2nd (21.4–23%), second only to malignant neoplasms [13,14].

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According to the classification, the following are distinguished:

• primary chronic pyelonephritis developing in an intact kidney (without developmental anomalies and diagnosed disorders of the urodynamics of the upper urinary tract);

• secondary chronic pyelonephritis arising against the background of diseases that disrupt the passage of urine;

• anomalies in the development of the kidneys and urinary tract;

- urolithiasis;
- ureteral strictures of various etiologies;
- Ormond's disease (retroperitoneal sclerosis);
- vesicoureteral reflux and reflux nephropathy;
- prostate adenoma and sclerosis;
- bladder neck sclerosis;
- neurogenic bladder (especially hypotonic type);
- kidney cysts and tumors;
- neoplasms of the urinary tract;
- malignant tumors of the genital organs.

Depending on the localization, the process can be unilateral or bilateral.

The phases of chronic pyelonephritis are distinguished:

• active inflammation;

• latent inflammation;

• remission or clinical recovery

In diagnostics: in the active phase of chronic pyelonephritis, the patient complains of dull pain in the lumbar region. Dysuria is uncharacteristic, although it may be present in the form of frequent painful urination of varying severity. Upon detailed questioning, the patient may cite a host of non-specific complaints: episodes of chills and subfebrile temperature, discomfort in the lumbar region, fatigue, general weakness, decreased performance, etc. [13,15].

Purpose of the study: of this study is to study the features of early diagnostics, investigate the etiology and dynamics of the prevalence of chronic pyelonephritis. Determine the importance of prevention and the impact of chronic pyelonephritis on health. In the etiology and pathogenesis of pyelonephritis, as well as other infectious diseases, it is necessary to isolate and identify the pathogen and its virulence, establish the factors that contribute to the infection of the organ or tissue, and the nature of the immune response of the macroorganism. Pyelonephritis is a disease of bacterial origin, but there is no specific pathogen. Pyelonephritis is caused by various microorganisms - bacteria, mycoplasma, viruses, fungi. The most common etiological agent of pyelonephritis is bacteria - gram-positive and gram-negative opportunistic pathogens, many of which belong to the normal human microflora that inhabits the skin and mucous membranes. Most often, pyelonephritis is caused by: Escherichia coli, Proteus, Enterobacter, Klebsiella, Pseudomonas aeruginosa, Staphylococcus aureus (golden, epidermal, saprophytic), Enterococcus [16]. Primary acute pyelonephritis occurs after hypothermia or stressful situations; this disease is often preceded by acute cystitis. When collecting anamnesis, it is necessary to find out the following data from the patient in detail: the presence of foci of chronic infection, the presence of

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anomalies in the development of the kidneys and urinary tract, causes that can cause a violation of the passage of urine from the kidneys, the presence of intercurrent diseases (diabetes mellitus, immunodeficiency states), information about previous inflammatory diseases of an infectious nature, taking antibacterial drugs, cytostatics, the presence of pregnancy and the characteristics of its course, information about gynecological diseases, abortions [10,12]. The main pathogens of pyelonephritis are E. coli (more than 35%), microorganisms of the Proteus group (Proteus mirabilis, P. species, P. rettgeri, P. morgani, P. vulgaris - up to 26%), Pseudomonas aeruginosa, Enterobacter sp., Klebsiella, Staphylococcus), streptococci, mycoplasma, viruses, fungal infection. In a small percentage (15%) of cases, the cause of pyelonephritis manifestations are associations of microorganisms. A characteristic feature of most pathogens is their opportunistic nature and ability to adhere, in connection with which uropathogenic strains of E. coli, carrying hemagglutinins with adhesive properties on their surface, undergo transformation and cause the formation of latent (subclinical) forms of chronic pyelonephritis. One of the most aggressive microbes in terms of etiopathogenetics in urological practice is staphylococcus, and the inflammatory process it causes is characterized by a high frequency of purulent-septic complications. Over the past 10 years, there has been an increase in the incidence of pyelonephritis and its often atypical course, especially with unimpaired urine flow, which is associated not only with improved diagnostic quality, but also with increased bacterial virulence and changes in the course of the infectious process in the kidneys due to impaired immune responses. Quite often, acute pyelonephritis ends in recovery, however, in up to 40% of cases, chronic pyelonephritis develops after acute purulent pyelonephritis [17].

Materials and methods of the study:

The object of the study was 82 medical records of patients suffering from chronic pyelonephritis, residents of the city of Tashkent. At the age of 25 to 70 years, with a diagnosis of chronic pyelonephritis. It is known that there are more women among patients, which is primarily predisposed by the anatomical and physiological characteristics of the female body.The age of the examined patients varied from 20-70 years, the average age was 47±0.8 years. The diagnosis of chronic pyelonephritis was established based on the results of clinical, laboratory and ultrasound examinations from the outpatient card. The laboratory examination included a general urine analysis, a urine analysis according to Nechiporenko, which allows for a detailed assessment of the number of leukocytes in the field of vision, a bacteriological examination of urine with determination of sensitivity to antibacterial drugs, a biochemical blood test, with determination of the level of creatinine, urea, glucose, and total protein. X-ray examination methods were carried out according to indications.

Results:

The ratio of patients with chronic pyelonephritis among men and women was 1:4. This indicates a higher proportion among female patients, which, according to literature data, is associated with the anatomical and physiological characteristics of the female body, which predispose to the incidence of kidney and urinary tract infections. Among the studied cards: 34 (19.74%) men aged 21 to 68 years, the average age was 44.5 ± 24 years, and 59 (80.26%) women aged 25 to 70 years,

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the average age was 51.2 ± 32 years. Based on the above data, it can be concluded that there is a higher proportion of patients with chronic pyelonephritis in the mature and elderly age groups.This conclusion can be made for both men and women. The higher incidence of mature and elderly populations may be related to the high level of urological morbidity, as well as the higher frequency of seeking medical care from this population group.

Conclusions: Acute and chronic forms of pyelonephritis are the most common diseases of the urinary system in all age groups. The incidence of pyelonephritis in the adult population is 0.8-1.5 per 1000 people. Urological diseases are no exception, to a greater extent this concerns inflammatory diseases of the prostate gland and kidneys [17]. Despite the many modern methods of diagnosis and treatment of acute and chronic pyelonephritis, the number of patients increases every year, the percentage of complications remains high. Pyelonephritis continues to be one of the most pressing problems in urology [2]. Despite the many modern methods of diagnosis and treatment of acute and chronic pyelonephritis, the number of patients increases every year, the percentage of complications remains high. Pyelonephritis continues to be one of the most pressing problems in urology [2]. In this regard, it is necessary to inform the patient:

• possible measures to prevent exacerbations of pyelonephritis;
• the danger of uncontrolled use of antibacterial drugs;
• the need for periodic monitoring of blood pressure;
• the procedure for action in case of exacerbation of the disease.

The prognosis for life with chronic pyelonephritis is favorable. Adequate antibacterial therapy and timely surgical interventions allow for long-term maintenance of kidney function. However, the prognosis varies significantly with different forms of the disease. Thus, in primary chronic bilateral pyelonephritis, CRF develops on average after 5-8 years, reaching the terminal stage after 10-15 years. In the secondary process, the prognosis is largely determined by the urological disease underlying the pyelonephritis. On average, the terminal stage of CRF in these patients develops after 10–20 years with adequate treatment. Retrospective analysis showed that within 10 years, chronic pyelonephritis leads to the terminal stage of CRF in 47.8% of patients [15].

Studies have shown that for the purpose of prevention and timely prevention of chronic pyelonephritis and its etiology, the following program-algorithm can be used;

• avoiding hypothermia;
• treatment of focal infectious processes;
• correction of carbohydrate metabolism disorders;
• removal of infected stones, drains, foreign bodies;
• restoration of urinary passage disorders;
• maintain personal hygiene;
• do not self-medicate.

A general urine analysis and ultrasound of the kidneys are used as a screening method, supplemented by questioning the patient about the characteristic manifestations of chronic pyelonephritis and diseases that contribute to its development [15].

Thus, to increase the effectiveness of pyelonephritis prevention and reduce the incidence of complicated and severe forms of the disease, it is necessary to implement a set of measures. The professional activity of a nurse is of great importance in the prevention of this disease

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