



## MEDICATIONS USED TO ENSURE THE MIGRATION OF SMALL STONES

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**Annotation:** Urinary stone disease is a chronic disease in which stones are formed in the renal-vascular system, due to a violation of the excretory (concentration) activity of urine and changes in the quantity and quality of urine. These changes are also associated with a violation of the general metabolism in the body. In the presence of small stones (microlithiasis), even several (2-3 mm), careful monitoring is recommended, the appointment of drug therapy with the addition of potassium citrate and abundant hydration. In cases where more intensive treatment is required, the choice of an appropriate stone treatment method depends on the composition and size of the stones, their location, and the anatomy of the urinary tract.

**Key words:** urolithiasis, nephrolithiasis, pyelonephritis, cystitis, oxalate stones, generalized aminoaciduria, phosphaturia, paroxysmal pain.

**The relevance of research.** Urolithiasis is a chronic, relapsing metabolic disorder characterized by the presence of calculi in the excretory system of the urinary tract, that is, in the kidneys, bladder, and urinary tract (stones). Stones also accumulate in the kidneys due to the lack of drinking more fluids, infectious inflammation of the urinary tract, a decrease in the volume of urine secretions, and an increase in the content of stone-forming substances. Separately, urolithiasis has also increased among children. Especially in infants with thymomegaly, urolithiasis also occurs. Excessive amounts of vitamin therapy, especially high doses of vitamins D, C and A, lead to the formation of kidney stones as a result of prolonged intake of more trace elements, calcium and, again, longer intake of sulfonamides. Stones first have a small size (from 1 mm to 3 mm) in the form of salt accumulations and come out through urinary secretions in people who lead a healthy lifestyle. The appearance of oxalate stones is caused by a change in the pH of urine in the range of 5.1-5.9. A higher formation of oxalate stones was recorded among residents, whose drinking water contains a low content of magnesium, as well as in food. The stronger the inflammatory process of the kidneys, the higher the level of oxaluria.

**Materials and methods:** Uraturia sometimes occurs in 1/4 of patients with kidney stones, especially in men. The disease is caused by a violation of the synthesis of purine nucleotides. The end product of purine metabolism is uric acid. It is released during tubular secretion and ball filtration, and is also reabsorbed in the tubules. The occurrence of uraturia occurs due to a violation of the synthesis of purines, which in two ways increase the formation of uric acid (in such cases, along with uraturia, the volume of uric acid in the blood increases), as well as with a decrease in the reabsorption of uric acid in the renal tubules. Generalized aminoaciduria occurs in most patients with kidney stones and in approximately more than half of their relatives. Its main feature is characterized by the release of amino acids in the

urine in excess of 2.5-5.5 grams (normally 1-2 grams) per day. Cystinuria is a genetically determined violation of the reabsorption of four amino acids-cystine, organic matter, lysine and ornithine. All patients with cystinuria also suffer from pyelonephritis. All patients with cystinuria also suffer from pyelonephritis. Galactosemia and fructosemia are congenital metabolic disorders associated with impaired sugar metabolism. Depending on the location of the stone, the patient may experience various symptoms, the main symptoms of this disease are: paroxysmal pain, kidney stone and stone in the upper part of the bladder usually characterized by pain in the back or side under the ribs. The pain can be severe and impenetrable, the intensity can vary with a frequency of up to 20-60 minutes. Often, the onset of pain is caused by physical stress, drinking large amounts of fluids, or taking diuretics. As the stone moves along the urinary tract, the place of pain changes, the pain spreads from the lower back to the abdomen, perineum, inner thighs, and buttocks. These symptoms are supplemented by frequent urination. The presence of blood impurities in the urine. In urolithiasis, renal colic precedes the admission of urine with blood. Cloudy urine with sediment can also indicate stone displacement. The general condition of the patient worsens, accompanied by nausea and vomiting.

**Results of the study:** Urolizan, Ursosan, Renalkist, Cystone, nephromax, Dinefro, tutukon, Kanefron, nefraxone and urokit K - preparations from medicinal plants, preservatives of potassium sterate. The drug Uralit-U (Madaus) has also proven itself as one of the medicines for litholysis. Uralit-U is a mixture of alkaline salts that combine with weak acids. The pharmacological effect of the drug is based on regulating the pH of urine and long-term maintenance of the urine reaction within the values of an alkaline medium (pH 6.2-7.5), at which uric acid salts are in solution and do not form concretions. The salt of alkaline metals and weak acid, released in the urine, shifts the pH of urine to the alkaline side (up to 6.2-7.5), which determines the increase in the degree of dissociation and solubility of uric acid. The bioavailability of Uralit-U is about 100%. The drug is rapidly and almost completely absorbed from the digestive tract. It is excreted from the body together with urine, and the blood electrolyte balance does not change during treatment.

Thus, despite the development of modern methods of treatment (remote lithotripsy, percutaneous nephrolithotripsy, ureteroscopy), the need for the use of pharmacological preparations remains, since complex drug therapy reduces the risk of recurrent stone formation by correcting biochemical changes in the blood and urine, and also promotes the removal of calculi. The analgesic, anti-inflammatory, diuretic effect of this drug is also in demand in the acute period, including urolithiasis. With hypercalciuria, thiazides (hydrochlorothiazide) are prescribed – the course of treatment is 1 month, diphosphonates (ethidronic acid) – the course of treatment is 1 month. With phosphaturia and phosphate stones, the urine has an alkaline reaction. These patients are prescribed a low-calcium-sparing diet to change their urine to an acidic environment, and milk, cheese, melons, and fruit are restricted. Meat products, fish, and vegetable fats are prescribed. When crystalluria of phosphates, diuretics and anti-inflammatory drugs of plant origin are used, the course of treatment is 1-3 months. The daily volume of urine for cystine stones should not be less than 3 liters. Citrate mixtures are taken, the course of treatment is 1-6 months. Courses of treatment with antispasmodics and analgesics are prescribed individually according to the instructions. Herbal diuretics and muretic herbs (Phytolysin, Urolesan, Cystone, lespenephрил, cystenal, ometin, avisan, etc.) are widely used, the course of treatment is 2-3

weeks, anti – inflammatory and antibacterial drugs are prescribed, the course of treatment is 7-10 days. Potassium citrate salt preservatives are also highly effective. For example, Urocyt K is prescribed for the treatment of renal tubular acidosis, accompanied by the formation of calcium-urate stones. When using potassium-sparing diuretics (spirinolacton, thiamineh) are not used in combination. Adults will need to take 1 tablet 3 times a day and take a blood test for hematocrit within 1 month. In children, it will be more appropriate to use preparations made from medicinal plants, although this treatment lasts for months, and side effects are less common.

**Conclusion:** Urinary stone disease occurs in children aged 3 to 10 years, and can sometimes occur in infants. It occurs more frequently in adults than in children. This condition can be associated with various cases of poisoning of infants due to their diet, constipation, and fever. Thus, the variety and complexity of pathogenetic factors in the formation of urolithiasis, affecting both metabolic aspects of urination, inflammatory reactions, and urodynamic disorders against the background of abnormalities in the development of the urinary system, require active diagnostic and therapeutic actions in pediatric patients that minimize the likelihood of recurrent stone formation, the risk of complications, and decompensation of renal functions.

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