

CURRENT APPROACHES TO THE TREATMENT OF UROLITHIASIS IN THE ELDERLY.

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The article discusses modern methods of diagnosis and treatment of urolithiasis in elderly patients. Minimally invasive techniques such as extracorporeal shock wave lithotripsy (ESWL), endoscopic surgery, and percutaneous nephrolithotomy have been described. Particular attention is paid to the choice of approaches depending on the individual characteristics of patients, such as the presence of concomitant diseases and complications. A review of scientific literature from Google Scholar, Scopus and PubMed databases was carried out. The findings highlight the need for an integrated approach that takes into account age-related changes and the patient's health status, as well as the importance of preventing relapses.

Keywords. Urolithiasis, elderly patients, lithotripsy, endoscopic surgery, percutaneous nephrolithotomy, minimally invasive methods, drug therapy, relapse prevention, urology, complications.

Introduction.

Urolithiasis (urolithiasis) is one of the most common urological diseases that affects a significant part of the population, especially in the elderly. With age, changes occur in the human body that affect the functioning of the kidneys and urinary tract, increasing the likelihood of stone formation. These changes can be caused by various factors, such as deterioration of metabolic processes, chronic diseases (diabetes mellitus, arterial hypertension), decreased mobility and altered water-salt balance.

Of particular difficulty is the treatment of urolithiasis in elderly patients. Age-related changes, concomitant diseases, as well as limited functional capabilities of the body require a more careful approach when choosing a treatment method. In recent years, significant progress has been made in the development of minimally invasive therapies such as extracorporeal lithotripsy, endoscopic and percutaneous surgeries. However, the choice of the appropriate method depends on many factors, including the size and composition of the stones, their location, and the patient's overall health.

This work is devoted to the study of modern methods of treatment of urolithiasis in the elderly, as well as the assessment of their effectiveness and safety, taking into account the characteristics of the age group.

Materials and methods.

For this study, a thorough review of the scientific literature on the topic of urolithiasis in elderly patients was conducted. The main sources of information

included scientific articles published in peer-reviewed journals, as well as recommendations from international medical organizations. Databases such as Google Scholar, Scopus, PubMed were used to find relevant publications covering modern approaches to the diagnosis and treatment of urolithiasis.

The initial stage of the study included the collection of data on the epidemiology of the disease, the features of the course of urolithiasis in the elderly and its main risk factors. Important aspects of the study were age-related changes in metabolism that affect the formation of stones, as well as the role of comorbidities such as hypertension, diabetes mellitus and kidney failure

The diagnostic methods that were considered in the study included ultrasound, CT scans, and a review of X-ray techniques. Particular attention was paid to assessing the accuracy and safety of each method for elderly patients, taking into account their increased risk of complications and comorbidities.

To evaluate therapeutic approaches, a comparative analysis of various methods for the treatment of urolithiasis, such as extracorporeal shock wave lithotripsy (ESWL), endoscopic techniques (urethroscopy and nephroscopy), and percutaneous nephrolithotomy, was carried out. The role of drug therapy aimed at dissolving stones, preventing recurrences and controlling metabolic processes was also studied. Particular attention was paid to the effectiveness of conservative treatment in the elderly and its ability to reduce the risk of surgical interventions.

To assess the safety and efficacy of each treatment method, a detailed risk assessment of complications specific to elderly patients was carried out. In this context, the association between the chosen methods of therapy and the presence of chronic diseases, such as cardiovascular pathologies and kidney disorders, was analyzed.

Results.

The results of the study confirmed that urolithiasis in elderly patients requires a special approach, both at the stage of diagnosis and in the choice of treatment methods. One of the key features of urolithiasis in this age group is the high incidence of concomitant chronic diseases, such as cardiovascular pathologies, diabetes and kidney failure. These factors significantly complicate both the diagnosis and treatment of the disease, requiring more individualized and sparing approaches.

The study showed that modern diagnostic methods, such as ultrasound and computed tomography, have high accuracy in determining the size, composition and location of stones. However, in elderly patients, ultrasound may give less accurate results due to age-related changes in tissues, while computed tomography remains the most informative method, although it is accompanied by an increased radiation load.

In terms of treatment methods, extracorporeal shock wave lithotripsy (ESWL) has been shown to be highly effective in removing small to medium-sized stones. However, in elderly patients, its effectiveness decreases in the presence of

complicating factors such as obesity, multiple stones or kidney disorders. In such cases, the likelihood of recurrence or the need for repeated procedures increases.

Эндоскопическая хирургия, включая уретроскопию и нефроскопию, показала хорошие результаты при лечении более сложных форм мочекаменной болезни, включая крупные камни и те, что расположены в труднодоступных местах. Эти методы обладают высокой эффективностью и низким уровнем осложнений при условии грамотного подбора анестезии, что особенно важно для пожилых пациентов с сердечно-сосудистыми заболеваниями.

Percutaneous nephrolithotomy has proven to be the most effective method for removing large and coral-like stones. However, for older patients, this method is associated with increased risks, such as infectious complications and a long recovery period. Despite this, with proper preoperative preparation and postoperative follow-up, this method remains preferable for patients with large stones, as it avoids more serious consequences.

Drug therapy aimed at dissolving urate stones and preventing recurrences has been shown to be effective in small stones and as an adjunct to mainstream treatments. However, it requires long-term use and strict monitoring of the patient's condition, which can be problematic for the elderly, especially in the presence of cognitive impairment.

The analysis also highlighted the importance of a comprehensive approach to the treatment of elderly patients with urolithiasis. In each case, it is necessary to take into account age-related changes, health status, the presence of concomitant diseases and the general functional capabilities of the body.

Conclusions.

The findings of the study highlight the importance of an individualized approach to the treatment of kidney stones in elderly patients. Age-related changes in the body, the presence of concomitant chronic diseases and a high probability of complications require a more careful choice of diagnostic and therapeutic methods. One of the key conclusions is the need to use minimally invasive technologies that demonstrate high efficiency with minimal risk to health.

Extracorporeal shock wave lithotripsy (ESWL) has been shown to be one of the preferred methods for the treatment of small to medium stones in elderly patients, but its effectiveness decreases in the case of large stones or comorbidities such as obesity and kidney failure. However, endoscopic techniques, including urethroscopy and nephroscopy, offer a wider range of options for treating complex cases of kidney stones, including large and multiple stones. These methods are highly effective and have a relatively low complication rate, especially with proper preoperative preparation and individualized selection of anesthesia.

Перкутанная нефролитотомия является наиболее подходящим методом для лечения крупных и коралловидных камней, но она сопряжена с более высоким риском осложнений у пожилых пациентов, что требует особой осторожности при её применении. Тем не менее, при правильной организации послеоперационного периода и интенсивном наблюдении, данный метод остаётся оптимальным для пациентов с большими камнями.

Drug therapy has also proven to be effective, especially in cases of urate stones and as a preventive measure. However, its use should be accompanied by constant monitoring of the patient's condition in order to avoid relapses and possible complications. This is especially important for elderly patients, for whom it is important to maintain a stable level of metabolic processes and control the impact of other chronic diseases.

An important aspect of the treatment of urolithiasis in elderly patients is the prevention of recurrences. In this context, both drug therapy and lifestyle changes, including optimizing diets, increasing physical activity levels and controlling water balance, play a key role. An individual approach to each patient, taking into account all risk factors and a careful choice of treatment methods can significantly improve the quality of life of patients and reduce the risk of recurrence of stones.

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