

THE LITHOLYTIC THERAPY IN PATIENTS WITH AN UNDRAINED KIDNEY

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✓ *Resume*

The results of analysis of litholytic therapy in 55 patients with urate lithiasis with an undrained kidney was considered. When studying the reasons for the ineffectiveness of litholytic therapy in 20 patients, it was revealed that 13 patients did not fully carry out litholytic therapy and did not adhere to a purine-restricted diet. In 3 patients with ineffective drug therapy, the chemical composition of the stone was represented by ammonium urate

Keywords: litholytic therapy, urolithiasis, urate urolithiasis, stone density, hyperuricemia.

ЛИТОЛИТИЧЕСКАЯ ТЕРАПИЯ У ПАЦИЕНТОВ С НЕДРЕНИРОВАННОЙ ПОЧКОЙ

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✓ *Резюме*

Рассматривался анализ результатов литолитической терапии у 55 пациентов с уратным литиазом с недренированной почкой. При исследовании причин неэффективности литолитической терапии у 20 больных было выявлено, что 13 пациентов не в полном объеме проводили литолитическую терапию и не придерживались диеты с ограничением пуринов. У 3 пациентов с неэффективной медикаментозной терапией химический состав камня был представлен уратом аммония.

Ключевые слова: литолитическая терапия; мочекаменная болезнь; уратный уролитиаз; плотность камня; гиперурикемия.

БУЙРАГИ ДРЕНАЖЛАНМАГАН БЕМОРЛАРДА ЛИТОЛИТИК ТЕРАПИЯ

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✓ *Резюме*

Буйраги дренажланмаган 55та беморда литолитик давлони тахлиллари кўриб чиқилди. Булардан 20 нафар беморларда литолитик давлони самарасизлиги сабаблари ўрганилганда маълум бўлдики: улардан 13 нафари давлони тўлиқ олмаганлиги ва амал қилмаганлиги аниқланди. Самарасиз дорилар билан даволашда 3 нафар беморларда тошининг кимёвий таркиби аммоний урат бўлган.

Калит сўзлар: литолитик терапия, сийдик тош касаллиги, уратли уролитиаз, тош зичилиги, гиперурикемия.

Relevance

Urolithiasis is a general disease of the body, in which the metabolism of minerals is disturbed, which leads to the appearance of sand, the deposition of salts and the formation of stones in the kidneys and urinary tract. This pathology occurs worldwide in at least 3% of the population (Javad-Zade S.M., 2007; Zuzuk F.V., 2017; Chiglintsev, D.Yu. et al., 2018). Most often it affects people in the most active period of their life - 20-60 years. The probability of urolithiasis of urolithiasis by the age of 70 is 12.5%.

A feature of the treatment of urate urolithiasis is litholytic therapy, that is, dissolving therapy. Litholytic therapy should be comprehensive, aimed at reducing the content of uric acid in the body. For this purpose, drugs are used that have a uricostatic effect (Zolotarev I.I., 2007, 2015). Patients are assigned a diet that restricts protein-rich foods. After the normalization of purine metabolism, while maintaining the passage of urine through the upper urinary tract, it is possible to prescribe citrate drugs that have a litholytic

effect. Treatment is carried out under ultrasound control, with which it is possible to assess the effectiveness of the ongoing litholytic therapy (Alyayev Yu.G., Amosov A.V., 2014; Tikinsky O.L., Aleksandrov V.P., 2017). Recently efficiency litholytic therapy examined by spiral computer tomography, in which measured not only the size of stone, but their density in units of Hounsfield (Vasil'yev P.V., 2017; Deveci Setal, 2018).

It is important to note that only uric acid stones are quite successfully soluble during litholytic therapy. Stones containing sodium urate and potassium urate are poorly soluble. Ammonium urate is practically insoluble (Dzeranov N.K., Beshliev D.A., 2018). It should be noted that patients with urate nephrolithiasis with impaired purine metabolism need regular dispensary observation and periodically correction of maintenance therapy, since otherwise the disease will relapse quickly (Ras C.Y., 2016; Riese R.J., Sakhaee K., 2017; Tiselius H.G., 2018).

Purpose of the study: to study the results of litholytic therapy with urate lithiasis with an undrained kidney.

Result and discussion

The analysis of the results of litholytic therapy in 55 patients with urate lithiasis with an undrained kidney was considered.

In these patients, the nature of the diet was ascertained, urine sediment, urine pH, and the state of metabolic status were examined.

Complex therapy for patients was carried out according to the following method: for 3 days, three times a day, patients determined the average indicators of urine acidity, respectively, in the morning, afternoon and evening. After that, the patients followed the above diet for a week. Further, within a week, patients were recommended only to measure the average indicators of urine acidity (without following a diet). In case of stabilization of urine acidity indices in the range of 6.2-6.8, these patients were recommended to follow the diet further, if it was impossible to correct urine acidity within the above limits, in addition to diet therapy, citrate mixtures were prescribed therapy.

Results of the study showed that when entering the urine sediment in 43 (78,2%) patients were identified salt of uric acid in 12 (21,8%) were found in urine sediment salts.

The distribution of patients according to the acidity of urine upon admission is shown in Table 1, from which it can be seen that in the overwhelming number of patients - 49 (89,1%) upon admission, the urine reaction was acidic.

Table 1

Distribution of patients by urine acidity on admission

Acidity of urine	Number of patients	
	absolute	%
5.0-5.5	39	70.9
5.6-6.0	10	18.2
more than 6.0	6	10.9
Total	55	100

When examining the state of the metabolic status, namely, the indicators of purine and calcium metabolism before and one month after the complex litholytic therapy, it was found that only 17 (30,9%) patients had no changes in the indicators of purine and calcium metabolism before the start of treatment.

and among the types of metabolic disorders, hyperuricuria (23,6%) and hyperuricemia (21,8%) prevailed. A month after the litholytic therapy in 44 (80,0%) patients, it was possible to achieve correction of metabolic disorders (Table 2).

Table 2

Indicators of metabolic status in patients with an undrained kidney

Types of metabolic disorders	Before treatment	One month after treatment
Hyperuricuria	13	4
Hyperuricemia	12	3
Hyperuricuria + hyperuricemia	8	2
Combination of disorders of purine and calcium metabolism	5	2
No changes identified	17	44

When studying the nature of nutrition, it was found that 42 (76,4%) patients noted a regular diet, and in 13 (23,6%) patients, food was irregular (eating and on the go in fast food restaurants).

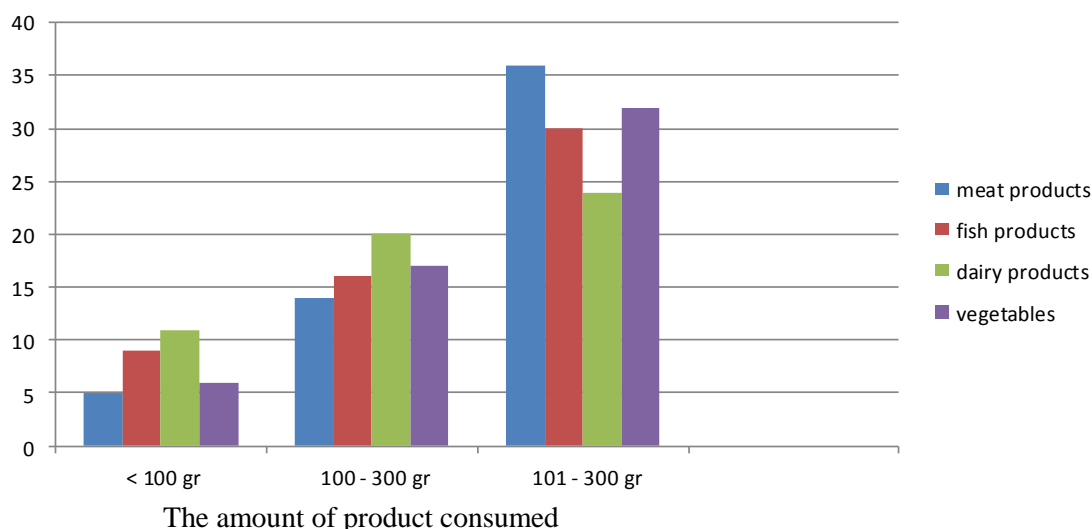
The daily fluid intake in 43 (78,2%) patients was up to 1,5 liters, in 12 (21,8%) patients - more than 1,5 liters. Also, 30 (54,5%) patients noted regular alcohol consumption.

The distribution of patients according to the prevalence of a particular product in the weekly diet is shown in Figure 1, from which it can be

seen that only 14 (25,4%) patients had a balanced diet, with a uniform (up to 300 grams per day) consumption of meat, fish, and dairy products. and vegetables. In 36 (65,4%) patients, the diet was dominated by meat products in the amount of more than 300 grams. The predominance of meat products in the diet (more than 300 grams), as well as an irregular diet, salty nature of food intake, reduced daily fluid intake during the day (up to 1,5 liters), as well as regular alcohol consumption, are risk factors and require correction nutrition.

Picture 1

Distribution of patients by diet



Therefore, all patients, especially those with an increased consumption of meat products and alcohol, in their treatment, in the first place, were recommended the following correction of the diet: meat and fish products were limited (liver, herring, kidneys, sausages, smoked meats, sprats, sardines, turkey, chicken, smoked and fatty fish), pickles, legumes, eggs, grains, fats (mutton, beef), mushrooms, sorrel, spinach, cauliflower, chocolate, figs, raspberries, peppers, mustard, cocoa, strong coffee and tea.

Patients were recommended:

1. Lean meat, fish no more than 3 times a week, boiled. After boiling, meat and fish can be used for cooking in various forms (stew, bake);
2. Dairy products: milk, fermented milk drinks, cottage cheese, sour cream, cheese;
3. Eggs: no more than one per day in any processing;
4. Fats: butter, cow, ghee and vegetable oils;
5. Cereals in the form of any dishes, in moderation;
6. Bread and flour products: wheat and rye, from second grade flour;
7. Vegetables: in sufficient quantity and in any processing;
8. Vegetarian soups: borsch, vegetable, potato, beetroot, dairy, fruit;
9. Cold for pieces: salads, fruits, vinaigrette;

10. Fruits, berries in any processing, dried fruits, milk jelly and creams, marmalade, jam, honey;

11. Sauces: vegetable, sour cream, milk;

12. Spices: citric acid, vanillin, cinnamon;

13. Drinks: tea, weak coffee with milk, fruit drinks, juices, decoctions of rose hips and dried fruits.

In the considered group of patients, the following average indicators of urine acidity were obtained in 49 (89,1%), 51 (92,7%), 47 (85,4%) patients, an acidic urine reaction was detected - up to 6,0 in the morning, daytime and evening time, respectively. Only in 4 (7,3%) patients, the average indicators of urine acidity were 6,2 or more.

After carrying out diet therapy for a week, the following data were obtained; the use of diet therapy made it possible to achieve stabilization of urine acidity in the range of 6,2 or more in 12 (21,8%) patients. Therefore, in these 12 patients, diet therapy was continued, and the remaining 43 (78,2%) patients were additionally prescribed therapy with citrate mixtures.

In a detailed analysis of the ongoing complex therapy, it was found that out of 43 patients, 30 (69,7%) patients underwent adequate litholytic therapy with adherence to a diet, 10 (23,2%) patients litholytic therapy was carried out without correction of the diet, 3 more (6,9%) of

the patient also did not follow the purine- restricted diet , while the litholytic therapy was carried out based not on a specific, but on the average urine acidity during the day.

At follow-up examination one month after complex litholytic therapy, complete dissolution of kidney stones was achieved in 30 (54,5%) patients. In another 5 (9,1%) patients, partial dissolution of urate stones was achieved, in connection with which they continued conservative

therapy. During the follow-up examination a month later, these 5 patients also achieved complete dissolution of the stones.

The distribution of patients by the effectiveness of litholytic therapy depending on the size and chemical composition of stones is shown in Table 3.

Table 3
The effectiveness of litholytic therapy depending on the size and chemical composition of stones

Stone size, cm	up to 1.5 cm (n = 32)	more than 1.5 cm (n = 23)
Chemical composition of stones		
Anhydrous uric acid (n = 32)	13 (81,2%)	10 (62,5%)
Uric acid dihydrate (n = 15)	6 (75,0%)	4 (57,1%)
Ammonium urate (n = 8)	2 (25,0%)	0
Total	21 (65,6%)	14 (60,9%)

As can be seen from Table 3, the most effective litholytic therapy turned out to be the most effective for kidney stones up to 1,5 cm and consisting of anhydrous uric acid - it was 81,2%, with stones up to 1,5 cm and consisting of uric acid dihydrate, the efficiency was 75%. With stones up to 1.5 cm and consisting of ammonium urate, dissolution was achieved in 2 patients. For stones larger than 1,5 cm and consisting of anhydrous uric acid and uric acid dihydrate, the efficacy was 62,5% and 57,1%, respectively.

When analyzing the administered litholytic therapy in 35 patients, in whom it proved to be effective, it was found that all of them, along with adherence to the diet, carried out adequate dissolving therapy - in severity depending on the indicators of urine acidity.

Conclusion

1. When studying the reasons for the ineffectiveness of litholytic therapy in 20 patients, it was revealed that 13 patients did not fully carry out litholytic therapy and did not adhere to a diet with restriction of purines;

2. In 3 patients with ineffective drug therapy, the chemical composition of the stone was represented by ammonium urate;

3. In 3 patients, the cause of ineffectiveness was a combination of items 1 and 2.

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