

Positive Effect of Sorbitol in Patients with Chronic Renal Insufficiency

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Abstract: The purpose of the study. To evaluate the effect of sorbitol in combination with enterosorbents on the gastrointestinal tract in the complex treatment of chronic renal failure.

Material and methods. The study included 40 patients with chronic renal insufficiency. Diagnosis and assessment of the severity of uremia was carried out by determining the glomerular filtration rate (blood urea and creatinine levels), A/D profile, as well as the degree of edema.

Results. In patients receiving sorbitol 10-15 days earlier than in the control group, there is a decrease in the level of nitrogenous slags in peripheral blood (urea, creatinine), a decrease in edema, a decrease in hypertension. Taking sorbitol is accompanied by a decrease in the symptoms of uremic intoxication and an improvement in the condition of patients, which occur after 7-10 days of treatment. This is manifested in a decrease in itching, nausea and vomiting, headache and a decrease in the level of nitrogenous toxins in the peripheral blood. Good health when taking sorbitol lasts from 1 to 6 and even 12 months.

Conclusion. The use of sorbitol in combination with other enterosorbents significantly complements traditional types of dialysis therapy, delaying the timing of the start of hemodialysis.

Keywords: sorbitol, chronic renal failure, enterosorbents, nitrogenous slags.

INTRODUCTION

Chronic renal insufficiency is a complication of all chronic kidney diseases, with this disease, changes in the digestive apparatus are quite common (uremic ulcers, gastropathies, enteropathy).

Patients with chronic renal insufficiency (CRF) have azotemia, edema and hypertension. The interest in gastroenterological aspects in CRF is not accidental. Involvement of the digestive organs in the systemic process is observed in all diseases complicated by CRF. The severity of gastrointestinal tract lesions is especially observed in patients with hypertensive and latent forms of chronic glomerulonephritis, complicated by CRF. Often these patients are mistakenly admitted to gastroenterological departments, as they have signs of severe stomach damage. But during inpatient examination, kidney pathology complicated by CRF is revealed in them, and signs of stomach damage are secondary [1]. A comprehensive study of patients with CRF using gastric probing and gastrofibroscopy revealed a clear relationship between gastric lesions and steadily increasing inhibition of its secretory function, depending on the stage of CRF.

In conditions of shortage of dialysis equipment and donor kidneys for transplantation, as well as taking into account the material capabilities of patients, conservative treatment of all stages of chronic renal failure becomes important.

The complex of conservative therapeutic measures for uremia is quite limited. Despite this, there is a real possibility with the help of enterosorbents to achieve positive results at the compensated stages of renal failure.

Enterosorbents — drugs of various structures that bind exo- and endogenous substances in the gastrointestinal tract by adsorption, absorption, ion exchange and complexation, are widely used in the treatment of CRF.

Sorption is a method that allows you to fix nitrogenous slags on the surface of chemical inactive substances with different molecular weights. This is ensured by the presence of pores of different diameters, in which the substances to be removed settle.

By chemical nature, sorbitol belongs to the group of sweet polyatomic alcohols-polyols. As a chemical compound, sorbitol has been known for a long time, but it received practical application after its chemical synthesis was carried out and many interesting properties were revealed: enterosorbent, hypotensive and dehydrating.

Enterosorption consists in taking sorbitol per os. The highest concentration of nitrogenous slags and uremic toxins is in the small intestine.

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In conditions of deficiency and unavailability of hemodialysis, given the predominant ability to remove nitrogenous slags by the mucous membrane of the antrum-pyloric part of the stomach and the intestinal mucosa, we use enterosorbents in various combinations and sorbitol in the complex treatment of CRF, since the latter has a pronounced laxative effect.

MATERIALS AND METHODS

A retrospective analysis of 40 medical histories and outpatient records of patients with chronic renal insufficiency who were on inpatient treatment and dispensary observation by a nephrologist of the National Medical Center of the Republic of Tatarstan in the period from 2011 to 2012, 20 (50% each) men and women aged 20 to 55 years was carried out.

All patients underwent general clinical research methods: general blood and urine tests, determination of urea and creatinine levels; Zimnitsky, Rehberg, FVD, ECG, kidney ultrasound, if necessary — excretory urography, A/D profile, measurement of daily diuresis.

In the therapy of the experimental group, which consisted of 20 patients — 10 men (50%) and women (50%), in addition to conventional drugs, sorbitol was included in a dose of 50-100 g per 200 ml of water per os for a long time (from the first days to 1 year). The control group consisted of 20 patients: 10 (50%) men and 10 (50%) women who received a generally accepted treatment regimen for chronic renal failure using enterosorbents (enterodez, lespeflan, lespenephil, polyphepan).

The obtained results were processed by the method of variational statistics. Microsoft Office Excel and MS Excel of the MS Office 2007 package were used for data processing.

RESULTS AND DISCUSSION

The results of our studies show that in patients of the experimental group, against the background of the use of sorbitol, multiple artificial diarrhea occurred on the day of admission, and in the control group receiving other enterosorbents, there was a threefold mushy stool. In patients receiving sorbitol 10-15 days earlier than in the control group, there is a decrease in the level of nitrogenous slags in peripheral blood (urea, creatinine), a decrease in edema, A / D levels. Taking sorbitol is accompanied by a decrease in the symptoms of uremic intoxication and an improvement in the condition of patients, which occurs after 7-10 days of treatment. This is manifested in a decrease in itching, nausea and vomiting, headache and a decrease in the level of nitrogenous toxins in the peripheral blood. Good health when taking sorbitol lasts from 1 to 6 and even 12 months.

In addition to the properties of binding to toxins, the dehydrating ability of sorbitol is equally important. By causing artificial diarrhea, we achieve a decrease in BCC, which indirectly affects the decrease in A / D, regulated by the renin-angiotensive system of the pathological kidney.

With CRF, there are signs of nephrogenic pulmonary edema, which reduces the vital capacity of the lungs. Due to the dehydration property of the sorbitol used, there is a decrease in nephrogenic pulmonary edema and, consequently, an increase in the vital capacity of the lung.

ulcerative disease of the stomach and duodenum is characterized by a wide prevalence, severity of the course and a tendency to chronization, leading to disability and mortality of patients. In the pathogenesis of the disease, the main role is assigned to the imbalance between the factors of aggression and protection of the mucous membrane of the stomach and duodenum against the background of changes in the neuroendocrine and immune regulation of the gastroduodenal zone. The main factors of aggression are hydrochloric acid, pepsin, bile acids, *Helicobacter pylori* (*H. pylori*), and protect the mucous membrane directly mucus, bicarbonates, epithelial hydrophobicity, proper blood supply, cell renewal of the epithelial layer, as well as produced prostaglandins and other mediators.

In accordance with this, in the treatment of peptic ulcer disease, the main task is to reduce aggression factors while simultaneously increasing protective mechanisms using appropriate medications: neutralizing acid-peptic aggression, increasing cytoprotective properties of the mucosa, having antibacterial action, stress-protective and mobilizing adaptive capabilities of the body.

We conducted an experimental and theoretical study on the selection of the optimal composition of the collection for the prevention and treatment of gastric ulcer. When composing the composition, the selection of plant components was carried out taking into account the main directions of pathogenetic therapy

CONCLUSION

Sorption, especially the use of sorbitol in combination with other enterosorbents, significantly complements traditional types of dialysis therapy, delaying the timing of the transition to extracorporeal detoxification methods.

LITERATURE

1. Ярмухаммедова, С., Гаффоров, Х., & Ярматов, С. (2020). JIGAR SIRROZIDA YURAKNING SISTOLIK VA DIASTOLIK DISFUNKTSIYASINING AHAMIYATI. Журнал кардиореспираторных исследований, 1(2), 85-87.
2. Ярмухаммедова, С. Х., & Афмирова, Ш. А. (2022). Изменения диастолической функции правого желудочка при гипертонической болезни. Science and Education, 3(11), 270-280.

3. Ярмухаммедова, С. (2020). ОЦЕНКА ПРИЗНАКОВ ДИАСТОЛИЧЕСКОЙ ДИСФУНКЦИИ ПРАВОГО ЖЕЛУДОЧКА У БОЛЬНЫХ С АРТЕРИАЛЬНОЙ ГИПЕРТОНИЕЙ. Журнал кардиореспираторных исследований, 1(2), 88-92.
4. Yarmukhamedova, S. (2020). SURUNKALI GLOMERULONEFRIT BILAN OG 'RIGAN BEMORLARDA ARTERIAL QON BOSIMINING SUTKALIK MONITORING KO 'RSATKICHLARINI BAXOLASH. Журнал кардиореспираторных исследований, 1(1), 103-108.
5. Nazarov, F. Y., & Makhmudova, K. D. (2022). THE USE OF STATINS AND DRUGS THAT INHIBIT THE ABSORPTION OF CHOLESTEROL IN PATIENTS WITH CORONARY HEART DISEASE. Galaxy International Interdisciplinary Research Journal, 10(1), 306-309.
6. Makhmudova, K. D., & Gaffarov, H. H. (2021, February). STUDYING THE LIVER FUNCTION IN BURN RECONVALESCENTS. In Archive of Conferences (Vol. 15, No. 1, pp. 208-210).
7. Nizamitdinovich, K. S., Alisherovna, K. M., Erkinovna, K. Z., & Davranovna, M. K. (2022). Heart Lesions in Rheumatological Diseases. Texas Journal of Medical Science, 13, 91-94.
8. Davranovna, M. K., Alisherovna, K. M., Erkinovna, K. Z., & Nizamitdinovich, K. S. (2022). Assessment of the Quality of Life of Patients with Coronary Heart Disease. The Peerian Journal, 11, 44-50.
9. Alisherovna, K. M., Nizamitdinovich, K. S., Davranovna, M. K., & Erkinovna, K. Z. (2022). Kidney Condition in Patients with Myocardial Infarction. Texas Journal of Medical Science, 13, 85-90.
10. Erkinovna, K. Z., Alisherovna, K. M., Davranovna, M. K., & Nizamitdinovich, K. S. (2022). Correction of Cytokine Imbalance in the Treatment of Stable Angina Pectoris. The Peerian Journal, 11, 64-70.
11. Nazarov, F. Y. (2021). CHANGES IN CYTOKINE SPECTRA AND THEIR SIGNIFICANCE IN COVID-19 VIRAL INFECTION COMPLICATED WITH PNEUMONIA. Web of Scientist: International Scientific Research Journal, 2(06), 62-69.
12. Nazarov, F. Y., & Yarmatov, S. T. (2020). Optimization of methods for prevention and intensive therapy of complications in pregnant women with chronic syndrome of Disseminated Intravascular Coagulation. Journal of Advanced Medical and Dental Sciences Research, 8(9), 82-85.
13. Yusufovich, N. F. (2022). PROVIDING SPECIALIZED MEDICAL CARE TO PATIENTS WITH VIRAL PNEUMONIA CAUSED BY SARS-COV-2. Web of Scientist: International Scientific Research Journal, 3(11), 1365-1372.
14. Alisherovna, K. M., Toshtemirovna, E. M. M., Totlibayevich, Y. S., & Xudoyberdiyevich, G. X. (2022). EFFECTIVENESS OF STATINS IN THE PREVENTION OF ISCHEMIC HEART DISEASE. Web of Scientist: International Scientific Research Journal, 3(10), 406-413.
15. Alisherovna, K. M., Totlibayevich, Y. S., Xudoyberdiyevich, G. X., & Jamshedovna, K. D. (2022). EFFICACY OF DRUG-FREE THERAPY OF HYPERTENSION DISEASES IN THE EARLY STAGE OF THE DISEASE. Spectrum Journal of Innovation, Reforms and Development, 7, 82-88.
16. Totlibayevich, Y. S., Alisherovna, K. M., Xudoyberdiyevich, G. X., & Toshtemirovna, E. M. M. (2022). Risk Factors for Kidney Damage in Rheumatoid Arthritis. Texas Journal of Medical Science, 13, 79-84.
17. Toshtemirovna, E. M. M., Alisherovna, K. M., Totlibayevich, Y. S., & Xudoyberdiyevich, G. X. (2022). Anxiety Disorders and Coronary Heart Disease. The Peerian Journal, 11, 58-63.
18. ALISHEROVNA, M. K., SHAXMAXMUDOVNA, S. Z., & TATLIBAYEVICH, Y. S. (2021). Effectiveness of Treatment of Chronic Heart Disease Insufficiency Depending on the Functional State of the Kidneys. JournalNX, 7(02), 240-333.
19. Alisherovna, K. M., Totlibayevich, Y. S., Xudoyberdiyevich, G. X., & Jamshedovna, K. D. (2022). PSYCHOSOMATIC FEATURES AND THE LEVEL OF DEPRESSION WITH CHRONIC HEART FAILURE IN PATIENTS WITH ARTERIAL HYPERTENSION AND CORONARY HEART DISEASE. Spectrum Journal of Innovation, Reforms and Development, 7, 89-95.
20. Alisherovna, K. M., Totlibayevich, Y. S., Xudoyberdiyevich, G. X., & Jamshedovna, K. D. (2022). CLINICAL FEATURES OF HEART FAILURE IN PATIENTS WITH ISCHEMIC HEART DISEASE AND THYROTOXICOSIS. Spectrum Journal of Innovation, Reforms and Development, 7, 108-115.
21. Totlibayevich, Y. S. (2022). CIRCADIAN RHYTHM BLOOD PRESSURE IN PATIENTS HEART FAILURE IN RENAL DYSFUNCTION. Web of Scientist: International Scientific Research Journal, 3(5), 582-588.
22. Alisherovna, K. M., Jamshedovna, K. D., Totlibayevich, Y. S., & Xudoyberdiyevich, G. X. (2022). FEATURES OF THE QUALITY OF LIFE OF PATIENTS WITH CHRONIC RENAL FAILURE IN THE TREATMENT OF HEMODIALYSIS. Spectrum Journal of Innovation, Reforms and Development, 7, 76-81.

23. Xudoyberdiyevich, G. X., Alisherovna, K. M., Toshtemirovna, E. M. M., & Totlibayevich, Y. S. (2022). Characteristics Of Neuropeptides-Cytokines in Patients with Cardiovascular Pathology Occurring Against the Background of Anxiety and Depressive Disorders. *The Peerian Journal*, 11, 51-57.
24. Назаров, Ф. Ю., & Ярматов, С. Т. (2022). SHIFOXONADAN TASHQARI ZOTILJAMNING KATTALARDAGI KLINIK XUSUSIYATLARI. *Журнал кардиореспираторных исследований*, (SI-2).
25. Xudoyberdiyevich, G. X. (2021). ASSESSMENT OF SIGNS OF MYOCARDIAL DYSFUNCTION IN PATIENTS WITH LIVER CYRROSIS. *Web of Scientist: International Scientific Research Journal*, 2(11), 197-201.
26. Zikiriyayevna, S. G., Muxtorovna, E. M., Mamadiyarovich, S. A., & To'raqulovna, Q. S. (2022). KIDNEY DAMAGE IN RHEUMATOID ARTHRITIS: RELATIONSHIP WITH CARDIOVASCULAR RISK FACTORS. *Galaxy International Interdisciplinary Research Journal*, 10(5), 857-862.
27. Zikiriyayevna, S. G., Zohirovna, M. G., Muxtorovna, E. M., & Bahromovich, S. S. (2022). Kidney Damage in Patients with Chronic Cardiac Insufficiency and Obesity. *Texas Journal of Medical Science*, 13, 72-78.
28. Zikiriyayevna, S. G., Muxtorovna, E. M., Mamadiyarovich, S. A., & Jurayevich, M. E. (2022). EVALUATION OF 12-WEEK URATE-REDUCING THERAPY WITH ALLOPURINOL IN COMBINATION WITH THE NONSTEROIDAL ANTI-INFLAMMATORY DRUG MELOXICAM IN PATIENTS WITH GOUT. *Galaxy International Interdisciplinary Research Journal*, 10(6), 140-148.
29. Palvanovna, K. Z., & Muxtorovna, E. M. (2022). THE PREVALENCE OF LESIONS OF THE DISTAL BRONCHIAL TREE (BRONCHIOLITIS) IN PATIENTS WITH RHEUMATOID ARTHRITIS. *Galaxy International Interdisciplinary Research Journal*, 10(5), 1044-1051.
30. Эргашева, М. Т. (2022). АРТЕРИАЛЬНАЯ ГИПЕРТЕНЗИЯ У ЖЕНЩИН В ПОСТМЕНОПАУЗЕ. *Журнал кардиореспираторных исследований*, (SI-2).
31. Nizamitdinovich, K. S., & Alisherovna, K. M. (2022). Quality of Life in Patients with Chronic Heart Failure, After Cardiac Resynchronization Therapy. *Texas Journal of Medical Science*, 14, 168-173.
32. Alisherovna, K. M., Rustamovich, T. D., Nizamitdinovich, K. S., & Xamroyevna, O. S. (2022). ASSESSMENT OF QUALITY OF LIFE IN PATIENTS WITH CHRONIC HEART FAILURE WITH PRESERVED CARDIAC OUTPUT. *Spectrum Journal of Innovation, Reforms and Development*, 9, 467-474.
33. Эргашева, М. Т. (2022). АРТЕРИАЛЬНАЯ ГИПЕРТЕНЗИЯ У ЖЕНЩИН В ПОСТМЕНОПАУЗЕ. *Журнал кардиореспираторных исследований*, (SI-2).
34. Alisherovna, K. M., Jamshedovna, K. D., Totlibayevich, Y. S., & Xudoyberdiyevich, G. X. (2022). FEATURES OF THE QUALITY OF LIFE OF PATIENTS WITH CHRONIC RENAL FAILURE IN THE TREATMENT OF HEMODIALYSIS. *Spectrum Journal of Innovation, Reforms and Development*, 7, 76-81.
35. Alisherovna, K. M., Toshtemirovna, E. M., Jamshedovna, K. D., & Xudoyberdiyevich, G. X. (2022). ASSESSMENT OF RENAL DYSFUNCTION IN PATIENTS WITH CHRONIC HEART FAILURE. *Web of Scientist: International Scientific Research Journal*, 3(5), 551-557.