



**CLINICAL-IMMUNOLOGICAL EFFICIENCY IN DIETHOTHERAPY OF CHRONIC
HEPATITIS WITH SORGO**

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Summary

Inflammation and changes in immune processes in chronic hepatitis are its main pathogenesis. These include cytolysis, inflammatory and cholestasis syndromes, as well as secondary immunodeficiency and cytokine profile disorders. This condition leads to a violation of metabolism (protein, fat, carbohydrates, vitamins, etc.) in the liver. The clinical course and activity of the disease depends on the types of pathological factors, namely viruses (V, C, D, E), toxic, alcoholic and autoimmune factors. Recommended sorghum porridge in chronic hepatitis is prepared from sorghum porridge separated from the shell.

Keywords: sorghum, diet therapy, chronic hepatitis, clinical, immunological, cytokines, cholestasis.

Relevance

In chronic viral hepatitis, liver cells are killed, their function is assumed by healthy cells, and they have to bear the double burden. When the diet is followed, it contains nutrients necessary for the body, which facilitates the work of cells. The economic value of imported foods (buckwheat, barley, Russian peas, seafood, etc.) used in the diet table No. 5 has led to their insufficient use in dietary therapy, and evolution has shown that digestion Local food products, especially cereals, are very well absorbed by the digestive system.

In chronic hepatitis, metabolism is impaired, in particular, protein synthesis activity, vitamins and micronutrients are reduced, fat-lipid metabolism is impaired, and liver fat infiltration occurs. Cytolysis, inflammatory and cholestasis syndromes, as well as secondary immunodeficiency and cytokine profile disorders are observed. Therefore, dietary foods require more protein, vitamins, trace elements and lipotropic substances, which increase the body's immunobiological stability. For this purpose, we offered a local grain product - sorgo (white corn) .



The Purpose of the Study

To include in the dietary therapy of patients with chronic hepatitis dietary foods made from white oats on the basis of new technology, to determine their clinical-laboratory and immunological effectiveness.

Object and Methods of Research

90 patients with chronic hepatitis (37 men and 53 women, chronic hepatitis with moderate viral activity - 50, toxic etiology - 21, unknown etiology - 12, liver cirrhosis - 7) were studied. Patients aged 21 to 74 years who were screened were divided into 2 groups.

In the first group, 45 patients were treated with traditional diet therapy against the background of standard drug therapy.

In the second group, 45 patients received traditional diet therapy in combination with standard drug therapy, enriched with "sorghum porridge" prepared on the basis of new technology. Clinical-laboratory and medical equipment adopted in clinical hepatology was used in the diagnosis of clinical signs in patients with chronic hepatitis.

Research Results

Pain under the right rib arch, dyspeptic symptoms, hemorrhagic symptoms and general weakness, enlargement of the liver and spleen are one of the main clinical signs of the disease in patients with chronic hepatitis. The remaining parameters were not observed uniformly in all patients.

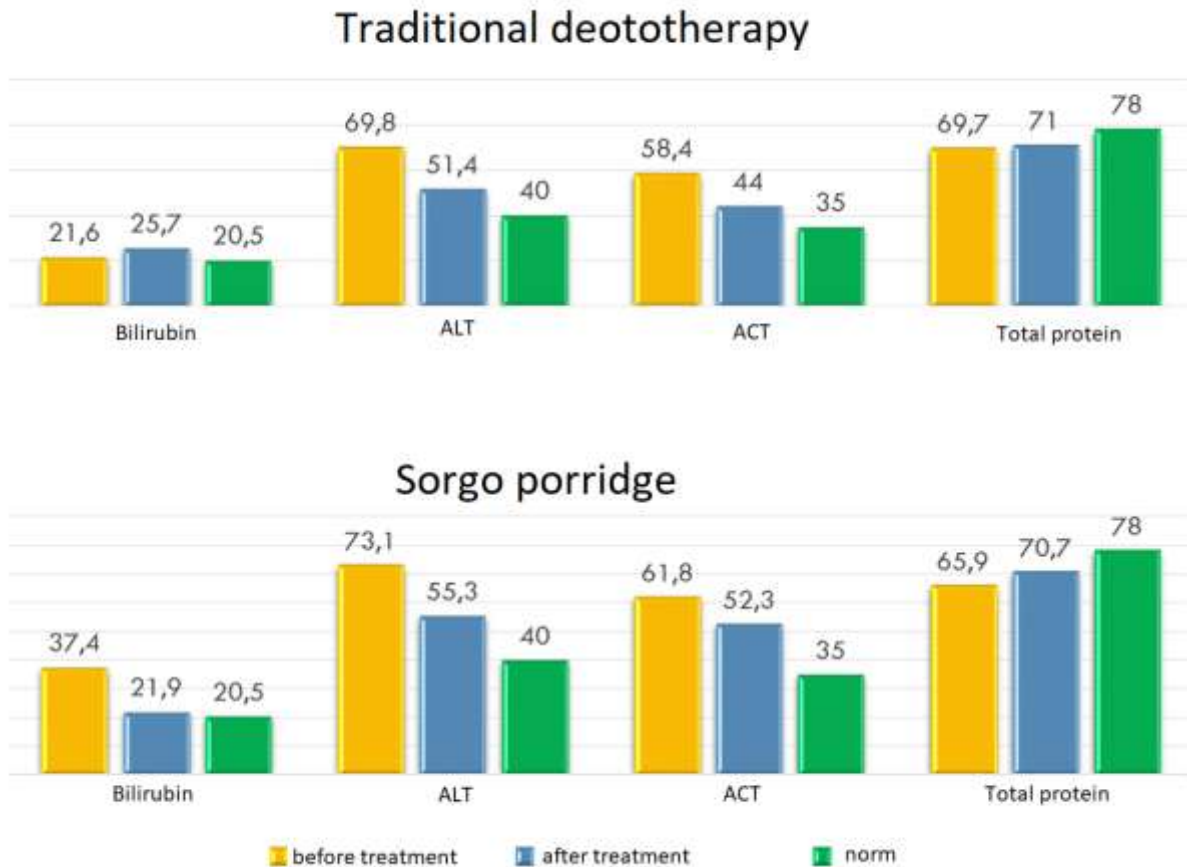
To determine the effectiveness of the complex therapy used, we examined the dynamics of the general blood test, i.e., the analysis of blood parameters before and after treatment. In biochemical analysis, unsaturated fatty acids, amino acids, vitamins restore the membrane of hepatocytes and enhance the synthesis of protein, albumin, fibrinogen in the liver, lipotropic properties sorghon reduces fat infiltration in liver cells. Total bilirubin levels are one of the most important indicators in this disease. In the group of conventional treatment, the amount of bilirubin decreased by 1.49 times, while in the group that consumed sorghum, it decreased by 11.11 times, which is one of the main indicators of the dietary properties of sorghum. Enzymes such as ALT and AST play a key role in diagnosis. Significant increases in these enzyme levels were observed in all patients, but after treatment, these values decreased, especially in group 2, where ALT decreased to 34.43 ± 3.33 and AST to 30.5 ± 2.84 . The main indicators in group 1 did not decrease to the required extent, and in group 2 there was a significant decrease compared to group 1. The significant changes in the total protein content also showed a significant increase.

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Table 1 Comparative study of cytotoxicity, cholestasis and inflammatory syndromes



It is known that Th1 cells produce potent cytokines that suppress inflammation, such as IL-1b, TNF- α , and others. Th2 cells mainly secrete anti-inflammatory cytokines such as IL-4, which stimulate the humoral line of the immune system. Imbalance in the production of cytokines Th1 / Th2 plays an important role in the immune pathogenesis of the development of inflammatory processes.

Based on the above, we studied the content of cytokines in the serum of patients with chronic viral hepatitis.

Studies have shown that pre-inflammatory serum levels of pre-inflammatory cytokines were significantly higher and different from normal. After treatment, serum IL-6 levels in the baseline group of patients decreased to normal values, while IgA, IgG, and IgM levels had normal values, while TNF- α was 1.4 and 1.29 times close to normal.



Table 2 Cytokines before and after treatment dynamics of level change

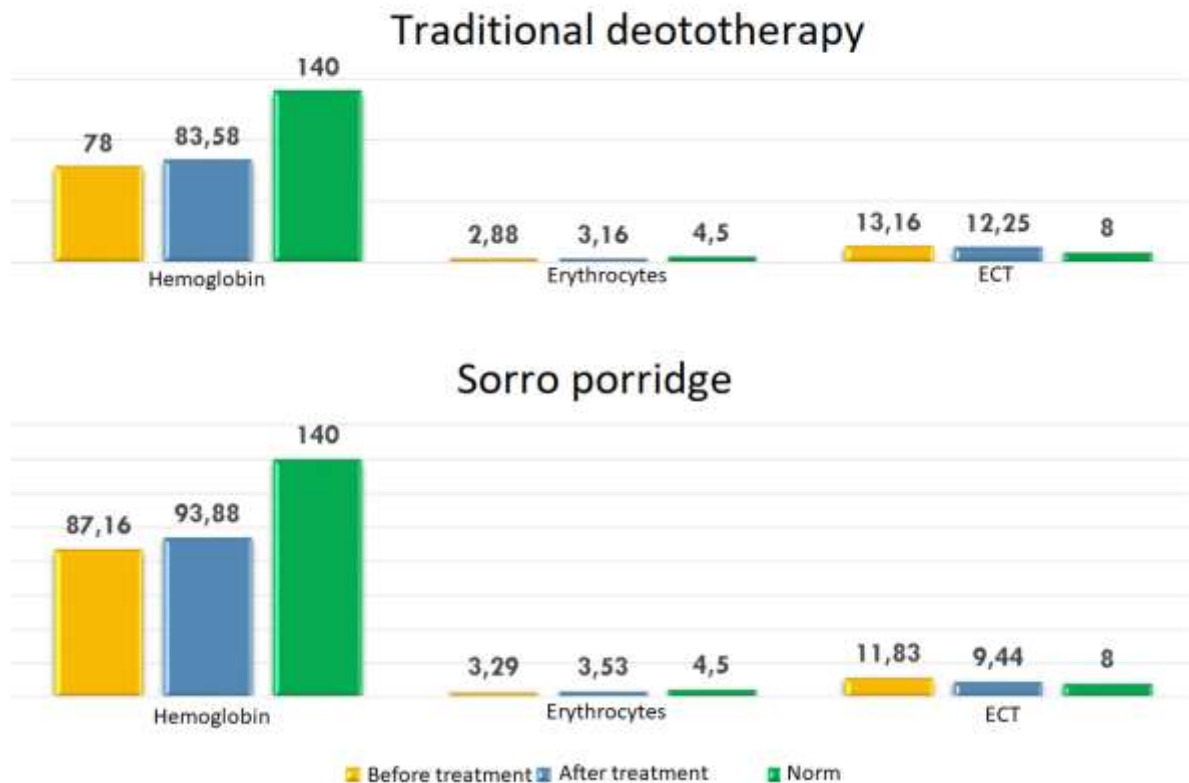
Indicators	Group 1 (n =45)		Group 2 (n =45)	
	Before treatment	After treatment	Before treatment	After treatment
THΦ-α	55,96±3,47	32,20±3,69***	68,94±3,34	28,1±1,96***
IL-6	51,79±4,54	24,04±2,41***	62,82±4,56	23,03±2,55***
IgA	1,03±0,08	1,27±0,07*	0,96±0,05	1,24±0,05***
IgG	7,08±0,38	8,60±0,23***	6,53±0,29	8,45±0,29***
IgM	0,94±0,1	1,06±0,04	0,78±0,04	0,99±0,04***

Note: * The difference in the indicators of the 1st subgroup is significant (* -P <0.05, ** - P <0.01, *** - P <0.001)

The picture of blood parameters after complex treatment showed a positive change in their blood count due to the protein-amino acids in sorghum, i.e., hemoglobin, erythrocytes, and ECG in the blood. Leukocytes in the blood and lymphocytes-immune cells, on the other hand, changed to normalization due to their immune-stimulating properties.

This indicates a significant improvement in key parameters in patients receiving a complex therapy consisting of a diet containing sorghum porridge.

Table 3 Patients with chronic hepatitis comparative dynamics of blood test indicators



Levels of coagulogram indices varied similarly, but the reliability of the changes was low.



Table 4 Comparative results of coagulogram parameters of patients with chronic hepatitis

Indicators	Group 1 (n = 45)		Group 2 (n = 45)	
	Before treatment	After treatment	Before treatment	After treatment
Prothrombin time	83,38±3,28	83,17±2,93	87,57±2,50	90,30±1,24
INR	1,26±0,03	1,28±0,02	1,16±0,03	1,16±0,02
Partially activated thromboplastin time	32,06±1,30	31,72±1,03	29,50±1,69	28,11±0,77
Thrombin time	22,32±0,94	22,22±0,87	23,16±0,56	22,66±0,38
Fibrinogen	268,62±13,64	274,20±13,84	250,63±12,80	278,63±8,91

Note: * -differences with pre-treatment data are significant (* - P <0.05, ** - P <0.01, *** - P <0.001)

Conclusion

1. The results of the study showed that clinical and laboratory findings in patients undergoing complex therapy with "Sorgo porridge" of cytolysis and cholestasis syndromes were significantly closer to the norm and positive results than in patients undergoing complex therapy with a traditional diet.
2. In patients undergoing complex therapy with "sorgo porridge" was observed higher anti-inflammatory level of cytokine profile, and the number of lymphocytes in the blood returned to normal.
3. Changes in immunoglobulin levels, especially class G and M, were observed in the regulation of secondary immunodeficiency in chronic hepatitis after diet therapy enriched with sorghum porridge.
4. In chronic hepatitis, positive changes in the hemogram were observed after diet therapy enriched with sorghum porridge.

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