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Therapeutic and Diagnostic Tactics for Acute Intestinal Obstruction in Patients with Diffuse Liver Diseases

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ABSTRACT

The article highlights the role of hepatoprotective therapy in the complex therapy of acute intestinal obstruction in patients with diffuse liver diseases. The data of 106 comorbid patients with mechanical acute intestinal obstruction suffering from various diffuse liver diseases, who developed enteral insufficiency syndrome of varying severity, were studied. Hepatoprotective therapy was included in the complex treatment. The results of the study proved the effectiveness of hepatoprotective therapy from the standpoint of both prevention and regression of the development of hepatic dysfunction and enteral insufficiency syndrome.

The relevance of studies related to acute intestinal obstruction (AIO) in patients with diffuse liver diseases (DLD) is significant and due to the high prevalence of this disease and not always favorable outcomes of its treatment [1]. It is relevant to study the role of hepatoprotective therapy in the treatment of AIO in patients with DLD. The basis for this direction of work is the fact that it is Kupffer cells of the liver that play a key role in the elimination of endotoxins [2, 3]. Endotoxicosis, in turn, is an indispensable companion of AIO in patients with DLD and an important link in the pathogenesis of multiple organ failure, which poses the greatest threat to the life of patients with this pathology [4, 5,6,10].

Rapidly progressing endogenous intoxication in AIO in patients with DLD induces the activation of liver detoxification mechanisms [7, 8]. In this regard, it is necessary to improve the compensatory functionality of the liver, which is the main and fundamental for achieving postoperative efficiency and full rehabilitation of patients in emergency surgery for acute intestinal obstruction [4, 9].

In this regard, a detailed study of the role of hepatoprotective therapy in the treatment of acute intestinal obstruction in patients with diffuse liver diseases becomes timely.

Purpose of the study — to study the effect of hepatoprotective therapy carried out in the postoperative period on the dynamics of clinical manifestations of acute intestinal obstruction in patients with diffuse liver diseases.

Material and methods

106 patients with mechanical acute intestinal obstruction in patients with DLD accompanied by enteral insufficiency syndrome (ESS) were examined. The patients were treated in the surgical

department No. 1, Bukhara regional branch, Republican Scientific Center for Emergency Medical Care in Bukhara in the period from 2020 to 2023.

Among the patients included in the study, there were 51 men and 55 women. 42 patients (39.6%) were under 60 years of age, 61 patients (57.5%) were aged 61-75 years, 3 patients (2.8%) were over 75 years of age.

Adhesive disease (34.5% of cases) and colon tumor obstruction (31.7%) prevailed among the causes of intestinal obstruction. All other causes combined (volvulus, intussusception, obstruction in the hernial sac) accounted for 33.8% of cases.

We used a scale for assessing the severity of enteral insufficiency syndrome (SES) proposed by Professor N.V. Zavada with co-authors. According to this scale: I degree SES was in 32 (30.2%) patients, II degree - in 50 (47.3%) patients, III degree - in 24 (22.6%) patients.

As a selective hepatoprotective drug, a solution for infusion "Riverton" LLC "Dream Pharma LLC, Uzbekistan" was used. Its active components are: succinic acid (5.280 g); N-methylglucamine (meglumine) (8.725 g); riboxin (inosine) (2.0 g); methionine (0.75 g); nicotinamide (0.25 g). Pharmacodynamic action is based on accelerating the transition of anaerobic processes to aerobic ones, improving the energy supply of hepatocytes, increasing the resistance of hepatocyte membranes to lipid peroxidation and restoring the activity of antioxidant defense enzymes. Riverton reduces cytolysis, which is manifested in a decrease in indicator enzymes: aspartate aminotransferases, alanine aminotransferases. It also helps to reduce bilirubin and its fractions, improves the excretion of direct bilirubin into bile. Reduces the activity of excretory enzymes of hepatocytes - alkaline phosphatase and gamma-glutamyl transpeptidase, promotes the oxidation of cholesterol into bile acids.

With intravenous administration, the components are quickly distributed in the tissues of the body. Riverton was administered intravenously in a daily dose of 400 ml at a rate of 40 drops per minute. The main group consisted of 52 patients in the complex treatment of which necessarily used hepatoprotective therapy with a balanced infusion solution "Riverton". The control group consisted of 54 patients who underwent traditional standard therapy and hepatoprotection was not performed in the complex treatment.

Results and its discussion

A significant difference in the number of patients with stopped SES between the studied groups was obtained only on the 7th day of treatment, before that, on the first day of the postoperative period, there were no more than a third of the group of patients with grade I SES. So, in the main group there were 16 (30.8%) patients who underwent hepatoprotective therapy, and 17 (31.5%) in the group without hepatotropic therapy. Patients with grade III SES on the first day after surgery were in the main group - 12 (23.1%) patients, in the control group - 11 (20.4%) patients. And patients with II degree of SES, in the main group were in 24 (46.2%) patients, and in the control group - in 26 (48.1%). In this regard, a statistically confirmed equality of groups according to the severity of SES was determined (tSt, p = -0.267, p>0.05) (Table 1).

Table 1. Distribution of patients in the study groups, taking into account the severity Enteral insufficiency syndrome

EIS	Day of treatment, abs., (%)							
	1-day		3- day		5- day		7- day	
	Main gr. (n=52)	Finite gr. (n=54)	Main gr. (n=52)	Finite gr. (n=54)	Main gr. (n=52)	Finite gr. (n=54)	Main gr. (n=52)	Finite gr. (n=54)
I deg.	16 (30,8)	17 (31,5)	20 (38,5)	17 (31,5)	23 (44,2)	22 (40,7)	41 (78,8)	28 (51,9)

II deg.	24 (46,2)	26 (48,1)	28 (53,8)	29 (53,7)	25 (48,1)	25 (46,3)	11 (21,2)	21 (38,9)
III deg.	12 (23,1)	11 (20,4)	4 (7,7)	8 (14,8)	4 (7,7)	7 (12,9)	0	5 (9,3)
tdeg, p	-0,267, p>0,05		-0,161, p>0,05		-0,143, p>0,05		-0,098, p<0,05	

The same changes were determined on the 3rd and 5th days of observation after the surgical intervention. In both groups, the number of patients with mild enteral insufficiency increased uniformly and the number of patients with severe enteral insufficiency decreased.

For example, on the 3rd day of the study, there were 20 (38.5%) patients with I degree SES in the main group, and 17 (31.5%) patients in the control group. At the same time, on the 5th day, their number in the main group increased to 23 (44.2%) patients, and in the control group - up to 22 (40.7%) patients. Along with this, the decrease in the incidence of patients with grade III SES on the 3rd day had a pronounced dynamics, when only 4 (7.7%) cases were registered in the main group, and 8 (14.8%) cases in the control group.). At the same time, on the 5th day, this rate slowed down, since there were 4 (7.7%) patients with grade III SES in the main group, and 7 (12.9%) in the control group. At the same time, statistical verification of the identity of changes in the severity of SES in patients of both groups on these days confirmed significant equality (Table 1).

On the seventh day of observation in the main group of patients with I degree of SES there were 41 (78.8%) patients, and in the control group - only 28 (51.9%) patients. At the same time, there were 11 (21.2%) patients with II degree SES in the main group, which is two times less than in the control group, where there were 21 (38.9%) such patients. In addition, patients with grade III SES were not found in the main group, and 5 (9.3%) in the control group. Thus, on the 7th day, a statistically confirmed difference between the compared groups in terms of the severity of enteral insufficiency was obtained (tCT=-0.098; p<0.05).

Changes in the severity of hepatic dysfunction had a slightly different trend (Table 2). On the first postoperative day, a moderate form of hepatic dysfunction was observed in half of the patients in both groups: in the main group - 26 (50%) patients, in the control group - 25 (46.3%).

With a favorable prognosis for the course of SES, 20 (38.5%) patients were recorded in the main group, in 25 (46.3%) patients in the control group. An unfavorable prognosis, corresponding to more than 20 points on the MELD scale, was noted in 6 (11.5%) patients in the main group, in 4 (7.4%) patients in the control group (tSt, p = -0.154, p>0, 05).

It is important that on the 3rd day in both groups, half of the patients had a favorable prognosis for the outcome of hepatic dysfunction, so in the main group there were 28 (53.8%) people, in the control group - 26 (51%). The number of patients with a relatively unfavorable prognosis on the 3rd day of the study remained almost the same (Table 4). There were 21 (42%) patients in the main group, 23 (45.2%) patients in the control group. At the same time, despite the difference in the treatment of patients with an unfavorable prognosis for the course of hepatic dysfunction on the 3rd day, in both groups there were 3 (5.8 and 5.9%, respectively) patients (tSt, p = -0.124 , p>0.05).

Table 2. Distribution of patients according to the severity of hepatorenal syndrome

MELD scale	Day of treatment, abs., (%)							
	1st		3rd		5th		7th	
	Main gr. (n=52)	Finite gr. (n=54)	Main gr. (n=52)	Finite gr. (n=51)	Main gr. (n=52)	Finite gr. (n=49)	Main gr. (n=52)	Finite gr. (n=47)
< 10	20 (38,5)	25 (46,3)	28 (53,8)	26 (51)	40 (76,9)	24 (48,9)	50 (96,1)	29 (61,7)

10-19	26 (50)	25 (46,3)	21 (40,3)	23 (45,1)	11 (21,2)	23 (46,9)	2 (3,9)	17 (36,2)
> 20	6 (11,5)	4 (7,4)	3 (5,8)	2 (3,9)	0	2 (4,1)	0	1 (2,1)
t-deg., P	-0,154, p>0,05		-0,124, p>0,05		-3,751, p<0,05		-5,882, p<0,05	

However, on the 5th day of the postoperative period, among patients who were prescribed a hepatoprotector, 40 (76.9%) patients, according to the MELD scale, had a favorable prognosis. In patients without correction of hepatic dysfunction, there were 24 (48.9%) of them. At the same time, patients with MELD scores in the range of 10-19 points in the main group were the remaining 11 (21.2%) people, and in the control group there were twice as many, and they amounted to 23 (46.9%) patients (Table 2). There were no patients with an unfavorable prognosis for the course of hepatic dysfunction in the main group, and in the control group there were -1 (2.1%) patients. Accordingly, the dynamics of hepatic dysfunction relief that we identified in the main group had a significantly faster trend compared to patients who were not prescribed a hepatoprotector (t-St, P = -3.751, p<0.05).

After a week of complex treatment, we found that in the main group of patients with a favorable course of hepatic dysfunction, there were 50 (96.1%) patients, and with a relatively unfavorable prognosis - 2 (3.9%), patients with an unfavorable prognosis did not was (Table 2). In the control group of patients with a favorable prognosis according to the MELD scale, there were 29 (61.7%) patients, with a relatively unfavorable prognosis - 17 (36.2%) patients.

At the same time, by the 7th day of treatment, in the group of patients who did not use a hepatoprotector, a patient with an unfavorable prognosis for the course of liver failure (2.1%) was identified. In addition, by this day of observation, there was a statistically confirmed difference between the studied groups according to the results of treatment (t-St, P -5.882, p<0.05).

Conclusions

1. Thus, with an equal number of patients with acute intestinal obstruction against the background of diffuse liver diseases with different severity of SES on the first day of the postoperative period, by the third day in the group of patients receiving Riverton, there is a more pronounced tendency to reduce the frequency patients with grade III SES than among patients without hepatoprotective therapy.
2. Hepatoprotective therapy significantly improves the results of treatment of acute intestinal obstruction in patients with diffuse liver diseases and should be recommended for inclusion in appropriate treatment algorithms.

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