

Therapeutic efficacy of the dig-da-shi-tan phyto-collection in complex therapy  
alcoholic liver damage in patients with chronic alcoholism

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Therapeutic efficiency of herbal remedy "Dig-da-shi-tan" in complex therapy of alcoholic  
damage of liver in patients with chronic alcoholism

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#### SUMMARY

In a clinical setting, work was carried out to study the effectiveness of the herbal remedy "Dig-da-shi-tan" in alcoholic liver damage. There were two groups of patients under observation according to the duration of the disease up to 5 years - group 1 and more than 5 years - group 2. Within each group, subgroups A and B were distinguished. Patients of subgroup A took the herbal collection "Dig-da-shi-tan", patients of subgroup B did not take "Dig-da-shi-tan". In addition, all patients received the same type of detoxification treatment; no other drugs affecting the hepatobiliary system were prescribed. To assess the functional state of the liver in patients in the blood serum, the activity of enzymes was determined: alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALP), gamma glutamyl transferase (GGT), as well as indicators of cholesterol, creatinine, total bilirubin. The degree of antioxidant activity of "Dig-da-shi-tan" was judged by the content of malondialdehyde (MDA) in the blood serum, as well as by the activity of catalase in the blood serum. As a result of the study, it was found that the phyto-collection "Dig-da-shi-tan" in case of alcoholic liver damage has a pronounced hepatoprotective effect, providing stabilization of the membrane structures of hepatocytes and preventing the development of cytolysis and cholestasis syndromes.

Key words: "Dig-da-shi-tan", chronic alcoholism.

#### RESUME

Pharmacotherapeutical efficiency of herbal remedy "Dig-da-shi-tan" have been studied in clinic. Two groups of patients less than 5 year, and more than 5 year of disease were observed. Within each group two subgroups (A and B) were formed. Patients of A subgroup took "Dig-da-shi-tan", patients of B subgroup did not take "Dig-da-shi-tan". All patients were simultaneously treated with antitoxic drug. No other hepatoprotective drugs were applied. The functional condition of patients' liver was estimated by enzyme activity in blood serum: alanine aminotransferase (ALT), aspartate aminotransferase (AAT), acid phosphatase (AP),  $\gamma$ -glutamine transferase (GGT). The content of cholesterol, creatinine and total bilirubin was also determined. Antioxidant activity of "Dig-da-shi-tan" was estimated by the content of malondialdehyde and catalase activity in blood serum. Thus it has been found that "Dig-da-shi-tan" showed strong hepatoprotective activity, providing stabilization of membrane structures of hepatocytes and preventing the development of cytolysis and cholestasis.

Keywords: "Dig-da-shi-tan", chronic alcoholism.

#### INTRODUCTION

In patients with alcoholism, liver lesions occupy the largest share in the pathology of internal organs. It is known that 90% of ethanol is broken down in the liver [5; 9]. The primary reaction of liver cells to excess ethanol intake is the development of hepatitis. Unhindered entry into the body of ethanol, acetaldehyde and other toxic products leads to necrosis of hepatocytes, and subsequently to cirrhosis of the liver [9].

Therefore, there remains a high need for hepatoprotective agents that increase the liver's resistance to the action of alcohol, normalizing its metabolism under conditions of stress detoxifying liver function [2; 3].

The aim of this study was to study the clinical efficacy and tolerance of the Dig-da-shi-tan phyto-collection, consisting of the aerial parts of the common toothed tooth (*Odontites vulgaris* Moench) and the bearded gentian (*Gentianopsis barbata* (Froel.) Ma, the roots of the yellowish sophora *Sohpora flaveescens* Ait and fruits of the apple-tree *Malus baccata* (L.) Borkh. when used in patients with chronic alcoholism, and also as a hepatoprotective agent in alcoholic liver damage (ALD) [4].

#### MATERIALS AND METHODS

A clinical study of the effectiveness of the phyto-collection "Dig-da-shi-tan" in alcoholic liver damage was carried out in 2003-2005. on the basis of the Republican Narcological Dispensary (Ulan-Ude) in inpatient and outpatient settings. 126 patients of different age groups (20–55 years old) with a disease duration from 2 to 11 years were under observation; the majority of patients were diagnosed with advanced stage II of alcoholism with binge drinking type of alcohol abuse (duration of binge drinking 14–20 days). Almost all patients, according to the anamnesis and clinical studies, by the end of the binge showed signs of alcoholic liver damage: a sharp decrease in appetite, nausea, vomiting, lingering of the tongue, pain and heaviness in the right hypochondrium, hepatomegaly, jaundice of the skin, icterus sclera, the presence of urine, bile pigments, etc.

According to the duration of the disease, all patients were divided into 2 groups: up to 5 years (1st group - 48 people), over 5 years (2nd group - 48 people). The control group (group 3 - 30 people) consisted of patients who occasionally consume alcohol. Within each group, subgroups A and B were distinguished. Patients of subgroup A took, and patients of subgroup B did not take the herbal remedy "Dig-da-shi-tan". In addition, all patients received the same type of detoxification treatment; no other drugs affecting the hepatobiliary system were prescribed.

"Dig-da-shi-tan" was taken in the form of a decoction (at the rate of 1 teaspoon per 200 ml of boiling water), 100 ml 3 times a day 30 minutes before meals for 7 days. To assess the functional state of the liver in patients, the serum activity of the following enzymes was determined: alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALP), gamma glutamyl transferase (GGT), as well as indicators of cholesterol, creatinine, total bilirubin.

The degree of antioxidant activity of "Dig-da-shi-tan" was judged by the content of malondialdehyde (MDA) in the blood serum, determined by the method of R.A. Temirbulatova and E.I. Seleznev [8], as well as by the activity of catalase in the blood serum, determined by the method of G.A. Bobenko [1].

Biochemical studies were carried out twice: on the 1st day of observation and on the 7th day. Clinical data on the course of treatment "Dig-da-shi-tan" were entered into a special card of the clinical study. A point assessment was made for each of the above signs of alcoholic liver damage: 0 - no, 1 - mild, 2 - medium, 3 - strong. When evaluating the clinical signs of the effectiveness of the Digda-shi-tan phyto-collection, first of all, we took into account its ability to reduce pain and a feeling of heaviness in the right hypochondrium.

The statistical analysis of the reliability of the difference in the averaged indicators in the studied groups of patients was carried out using the Student's t-test.

#### RESULTS AND DISCUSSION

As a result of the research, it was found that already from the third day of taking the Dig-dashi-tan photo collection, there was a decrease in pain in the right hypochondrium. Complex treatment of patients with

alcoholic liver damage already by the 3rd day of treatment made it possible to noticeably reduce the severity of the main clinical signs, and by the 7th day to completely stop the pain syndrome in most patients of the 1st group (Table 1). The effect of "Dig-da-shi-tan" in patients of group 2 was also accompanied by positive dynamics, although clinical symptoms persisted longer than in patients of group 1 (Table 2). These changes in the course of hepatopathies in patients were accompanied by positive dynamics of biochemical parameters. Thus, the activity of the Enzyme AsAT in the blood serum during treatment with Dig-da-shi-tan in groups A before and after 5 years decreased by 43% and 50%, ALT by 60% and 42%, respectively. In patients of group B (before and after 5 years) who did not take Dig-da-shi-tan, the activity of the AST enzyme decreased by 31% and 36%, and ALT by 55% and 36%, respectively. A decrease in cholesterol content and alkaline phosphatase activity was also observed. The bilirubin content decreased 2.9 times. Indicators of creatinine content and the level of GGT activity remained elevated by the 7th day, especially in the group with a longer history of alcoholism (Table 3).

When included in the therapy "Dig-da-shi-tan" on the 7th day of observation, the general somatic and mental state of the patients improved significantly: the background of the mood was leveled, the craving for alcohol decreased, the blood pressure and heart rate returned to normal. According to the self-reports of patients who repeatedly experienced a state of alcohol withdrawal, during the treatment of "Dig-da-shi-tan" the process of getting out of this state proceeded much easier and faster than with conventional therapy. In the study of LPO parameters in the blood serum of patients of group A before and after 5 years who received "Dig-da-shi-tan", a decrease in the content of MDA was found by 56% and 36%, respectively, while in patients of group B by 12% and 25%. An increase in catalase activity was also noted in group A patients by 31%, in group B patients - by 7% and 21%, respectively,

Table 1

The effect of "Dig-da-shi-tan" on the clinical signs of hepatopathies in patients with chronic alcoholism with a disease duration of up to 5 years

№	Клинические признаки	Под-группы	До лечения	Выраженность признаков в баллах		
				Дни лечения		
				3	5	7
1	Боль и тяжесть в правом подреберье	А	3,0	2,9	1,7	0
		Б		2,6	1,8	1,2
2	Увеличение печени	А	2,1	2,1	2,0	1,8
		Б		2,1	2,1	2,0
3	Желтушность кожных покровов	А	2,2	2,1	1,8	1,6
		Б		2,0	1,9	1,8
4	Иктеричность склер	А	2,2	2,2	1,9	1,2
		Б		2,2	2,0	1,8
5	Наличие желчных пигментов в моче	А	2,6	2,4	1,8	0,5
		Б		2,5	2,0	1,5

Здесь и далее: А – больные, получавшие дезинтоксикационную терапию и «Диг-да-ши-тан»; Б – больные, получавшие только дезинтоксикационную терапию.

### CONCLUSION

The data obtained indicate the presence of detoxification and hepatoprotective action of "Dig-da-shi-tan" in alcoholic liver damage. Judging by the results of the study (Table 4), "Dig-da-shi-tan", the pharmacological activity of which is provided by a wide range of biologically active substances (flavonoids, vitamins, coumarins, saponins, essential oils, trace elements, etc.), is an effective antioxidant ... It is known that flavonoids, vitamins, coumarins and other biologically active substances inhibit lipid peroxidation, stabilize membranes [6; 7], this herbal remedy reduces

permeability of cell membranes of hepatocytes, restores the amount of glycogen, improves metabolic processes in the affected liver. An important feature is the ability of "Dig-da-shi-tan" to quickly reduce the severity of liver damage, in particular the manifestation of cytolysis and cholestasis syndromes.

Preventing gross violations of the structure and function of the liver, "Dig-da-shi-tan" accelerates regeneration and helps to restore the functional activity of the organ. Considering that "Dig-da-shi-tan" activates biochemical detoxification systems and has antioxidant properties, it seems reasonable and appropriate to use it for pharmacological correction of toxicogenic disorders in complex therapy and prevention of alcoholic liver damage. In this case, the optimal is the appointment of "Dig-da-shi-tan" at the initial stage of treatment.

table 2

The effect of "Dig-da-shi-tan" on the clinical signs of hepatopathies in patients with chronic alcoholism with a disease duration of more than 5 years

№	Клинические признаки	Под-группы	До лечения	Выраженность признаков в баллах		
				Дни лечения		
				3	5	7
1	Боль и тяжесть в правом подреберье	А	3,0	2,9	2,5	1,4
		Б		2,9	2,6	1,8
2	Увеличение печени	А	2,6	2,6	2,4	2,2
		Б		2,5	2,4	2,3
3	Желтушность кожных покровов	А	2,8	2,6	2,2	1,8
		Б		2,7	2,5	2,1
4	Иктеричность склер	А	2,8	2,6	2,2	1,6
		Б		2,6	2,4	2,0
5	Наличие желчных пигментов в моче	А	2,8	2,4	1,9	1,2
		Б		2,8	2,1	1,8

Table 3

The influence of "Dig-da-shi-tan" on biochemical parameters in patients with alcohol liver damage depending on the duration of the disease on the 7th day

Длительность заболевания	АсАТ, мкМ/л·ч	АлАТ, мкМ/л·ч	Холестерин, Мм/л	Щелочная фосфатаза, ЕД	Креатинин, мкМ/л	Общий билирубин, мкМ/л	ГГТ, ЕД/л
<b>1-день (при поступлении)</b>							
До 5 лет (n = 48)	1,30 ± 0,01	2,10 ± 0,04	11,0 ± 2,12	310,0 ± 21,0	315,0 ± 22,4	70,2 ± 7,5	130,0 ± 12,8
Более 5 лет (n = 48)	1,40 ± 0,06	2,60 ± 0,12	12,60 ± 2,30	340,0 ± 18,0	356,5 ± 21,6	66,2 ± 9,9	360,0 ± 26,8
<b>7-й день</b>							
<b>До 5 лет</b>							
Подгруппа А (n = 24)	0,74 ± 0,02*	0,84 ± 0,04*	8,42 ± 0,5*	142,0 ± 10,2*	116,5 ± 11,4*	20,0 ± 0,6*	102,0 ± 3,10*
Подгруппа Б (n = 24)	0,90 ± 0,02*	0,94 ± 0,02*	9,30 ± 0,4	164,0 ± 14,2*	142,0 ± 10,4*	24,0 ± 2,9*	120,2 ± 6,40*
<b>Более 5 лет</b>							
Подгруппа А (n = 24)	0,70 ± 0,02*	1,5 ± 0,04*	8,30 ± 0,7*	146 ± 12,4*	128,5 ± 9,5*	17,0 ± 1,2*	115,0 ± 5,0
Подгруппа Б (n = 24)	0,90 ± 0,05*	1,66 ± 0,05*	8,90 ± 0,5*	169,0 ± 14,2*	180,6 ± 16,1*	24,0 ± 1,2*	150,0 ± 7,14*
Контроль (эпизодическое употребление) (n = 30)	0,72 ± 0,02	0,66 ± 0,05	6,60 ± 1,20	108 ± 12,50	92,3 ± 13,20	10,0 ± 2,10	60,9 ± 12,10

Примечание: \* – различие достоверно по сравнению с данными при поступлении при  $P \leq 0,05$

#### CONCLUSIONS

1. Appointment of the herbal remedy "Dig-da-shi-tan" to a group of patients with alcoholic injury the liver is characterized by a decrease in signs of intoxication, normalization of biochemical parameters in blood serum and an improvement in the general condition of patients;

2. The obtained results of the conducted research argue the expediency of the use of a new hepatoprotective agent "Dig-da-shi-tan" for the treatment and prevention of alcoholic liver damage in combination with other medical

preventive measures. In this case, the optimal is the appointment of "Dig-da-shitan" at the initial stage of treatment of patients with alcoholism.

The author expresses his deep gratitude and appreciation to Ch. Doctor of the Narcological Dispensary of the Ministry of Health of the Republic of Belarus, Ulan-Ude, Ph.D. Dil Andrei Alexandrovich for his help in conducting clinical trials.

Table 4

Dynamics of changes in LPO and antioxidant system indicators in patients with alcoholic liver damage before and after the appointment of "Dig-da-shi-tan"

Длительность заболевания	МДА, мкМ/мл		Каталаза, мкат/л	
	1 день	7 день	1 день	7 день
До 5 лет				
Подгруппа А	2,50 ± 0,10	1,40 ± 0,02*	0,52 ± 0,04	0,75 ± 0,14*
Подгруппа Б		2,20 ± 0,02*		0,56 ± 0,11
<b>5-10 лет и более</b>				
Подгруппа А	2,80 ± 0,10	1,80 ± 0,02*	0,44 ± 0,03	0,64 ± 0,13*
Подгруппа Б		2,10 ± 0,04*		0,56 ± 0,12
Контроль (эпизодическое употребление)	1,78 ± 0,12	1,80 ± 0,11	0,68 ± 0,03	0,57 ± 0,03

Примечание: \* – различие достоверно по сравнению с данными при поступлении при P ≤ 0,05

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alcoholic liver damage in patients with chronic alcoholism / Zh.B. Dashinamzhilov // Traditional medicine. - 2015. - No. 2 (41). - S.46-49.

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