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# Effectiveness of ganoderma lucidum extract in the treatment of patients with duedenal ulcer with intestinal dysbiosis

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**Abstract:** Purpose of the study: to study and scientifically substantiate the use of magnetotherapy in combination with synbiotics in the rehabilitation treatment of patients with intestinal dysbiosis. Research methods: 90 patients with colonic dysbiosis, 53 women and 37 men, aged 18-65 years, were studied.

Treatment methods. In accordance with the objectives of the study, all patients were divided into groups comparable in terms of the main clinical and physiological characteristics. Patients of the first group (30 patients) were treated with magnetic therapy (MT) from the "Olymp-1" apparatus.

The impact was carried out by 4 pairs of inductors - solenoids on the area of projection of the organs of the large intestine; exposure parameters: intensity - 30% - 100%, frequency 10 Hz, magnetic induction value - 5 mT. The procedures were carried out daily, lasting 15-20 minutes. The course of treatment is 10-12 procedures. Patients of the second group (30 patients) underwent complex treatment: MT according to the above method, as well as a synbiotic consisting of an extract of Ganoderma Lucidum - 1 capsule 2 times a day with meals for 21 days

In the third comparison group (30 patients), the effect of MT from the "Olymp-1" apparatus (placebo) was imitated. The course of treatment consisted of 10-12 procedures. Ganoderma Lucidum extract was included in the treatment complex according to the above scheme.

The results of the conducted studies give grounds to regard the complex treatment of MT and synbiotics, consisting of Ganoderma Lucidum extract, as pathogenetically substantiated and effective in the treatment of patients with DC, which expands the arsenal of non-drug therapy means at various stages of therapeutic and restorative measures in the studied contingent of patients.

**Keywords:** Ganoderma Lucidum, Olymp-1, dysbiosis

**Introduction.** One of the components of the pathological symptom complex is the development of dysbiotic conditions, which is associated, among other things, with the wide and often unreasonable use of antibiotic therapy for various diseases. In the scientific literature there are data indicating a 100% combination of some diseases with intestinal dysbiosis (DC) (Strizhova N.V. et al., 2001; Pasman N.M. et al., 2006), which leads to the formation of a syndrome of mutual burden , and thus complicates the treatment of this category of patients. The experience of using synbiotics (SG) in gastroenterological practice is widely presented in the literature (Gusakova E.V., 2005; Efendieva M.T. et al., 2006; Ushkalova E.A., 2007; Gionchetti P. et. Al, 2006; McFarland LV, 2006). The results of recent studies give reason to consider the methods of physical therapy as one of the most promising, given the possibility of their differentiated and targeted impact on various links of the pathogenesis of the disease, an increase in the adaptive and reserve capabilities of the body with a minimum risk of developing side and allergic reactions (Strugatsky V.M. et al., 1999; Razumov A.N., 2002).

Various methods of physiotherapy are successfully used in gastroenterological practice. At the same time, the experience of using magnetotherapy in the treatment of intestinal diseases (Serdyuk V.V., 2004, Eremina A.A., 2007) is limited. The theoretical prerequisite for the use of magnetic therapy (MP) in patients with intestinal dysbiosis is the data of previous studies, indicating its beneficial effect on the state of the body's regulatory systems, an increase in adaptive reactions, an improvement in regional hemodynamics in patients with various pathologies (Bogolyubov V.M. et al., 1998; Berkutova AM et al., 2000), which is important in the treatment of this category of patients.

Objective: to study and scientifically substantiate the use of Ganoderma Lucidum extract in the treatment of patients with duodenal ulcer with intestinal dysbiosis.

Research methods: 90 patients with colonic dysbiosis, 53 women and 37 men, aged 18-65 years, were studied.

In addition to general clinical studies, laboratory diagnostics of DC were carried out according to the method developed by R.V. Eshpteinitvak and F.L. Vilypanskoy (1970), endoscopic examination of the colon using the Olympus apparatus, histological examination of biopsy specimens of the colon mucosa, assessment of the immune status using tests that give an idea of the quantitative indicators of cellular and humoral immunity: T- and B-lymphocytes, immunoglobulins class G, A, M in peripheral blood (methods of MJondal al., 1972; I. Morettaetal., 1975; G. Mancini, 1965), assessment of psychological status using a computer version of the SMOL (Abbreviated Multifactorial Questionnaire for Personality Research) according to the Hare method V.P. (1981), assessment of the psychosomatic state using the SAN test (well-being, activity, mood). The data obtained were processed by the methods of variation statistics using the Microsoft Excel (2007) software package on an IBM PC with the calculation of Student's t-criterion (as modified by Fisher). In the presence of related samples, the Student's difference test was used. To assess the difference in shares (change in the presence of the sign as a percentage), the alternative F-test was used. Differences between mean values were considered significant at p

Treatment methods. In accordance with the objectives of the study, all patients were divided into groups comparable in terms of the main clinical and physiological characteristics. Patients of the first group (30 patients) were treated with magnetic therapy (MT) from the "Olymp-1" apparatus. The impact was carried out by 4 pairs of inductors - solenoids on the area of projection of the organs of the large intestine; exposure parameters: intensity - 30% - 100%, frequency 10 Hz, magnetic induction value - 5 mT. The procedures were carried out daily, lasting 15-20 minutes. The course of treatment is 10-12 procedures. Patients of the second group (30 patients) underwent complex treatment: MT according to the above method, as well as a synbiotic consisting of an extract of Ganoderma Lucidum - 1 capsule 2 times a day with meals for 21 days

In the third comparison group (30 patients), the effect of MT from the "Olymp-1" apparatus (placebo) was imitated. The course of treatment consisted of 10-12 procedures. Ganoderma Lucidum extract was included in the treatment complex according to the above scheme.

#### Research results:

Assessing the dynamics of pain syndrome, it should be noted the advantages of complex treatment: complete relief of pain took place in 83.3% (p0.05) - 1- groups. In all patients with diarrhea, stools became less frequent in groups 2 and 3, and remained unchanged in group 3. Positive changes also occurred in the state of intestinal biocenosis, which was characterized by a significant improvement in the composition of both anaerobic and aerobic components. In 83% (p0.05) of the 1st group, there was an increase in bifidobacteria and lactobacilli to normal values. The latter led to both the normalization of stool frequency and the relief of flatulence in 76.2% (p9; p = 0.031 and x 2 = 8L; P = 0.048 and for a negative amine test,% 2 = 9.5; p = 0.042 and x 2 = 7.3; p = 0.053.

In the implementation of the therapeutic effect in patients with DC with local application of physical factors, great importance is attached to the improvement of regional blood circulation in the area of the pathological focus, which, to a certain extent, can be judged from the data of rheovasography. Analysis of the dynamics of regional blood circulation revealed an improvement in blood circulation in the abdominal organs, which is realized mainly due to an increase in blood circulation in the vessels, restoration of vascular tone, and a decrease in the phenomena of angiospasm (Table 1).

Table 1
Dynamics of rheovasography (RVG) indices of the pelvic organs in patients with DC
after the course of treatment

RVG indicators	Group 1	Group 2	Group 3
	(MT)	(MT +	(GanodermaLucidumextract)
		GanodermaLucidumextract)	
Ri (Ohm)	0,039+0,0016	0,041±0,0017	0,041±0,0022

	0,052+0,0013*	0,069±0,011*	0,047±0,0023
a (c)	$0,24\pm0,04$	0,25±0,08	$0,26\pm0,08$
	$0,20\pm0,07$	0,19+0,07	$0,22\pm0,07$
P(c)	0,58±0,01	0,60+0,008	$0.61 \pm 0.011$
	$0,54\pm0,02$	0,54+0,050*	0,57+0,24
T(c)	0,80±0,06	0,87±0,O07	0,88±0,06
	$0,78\pm0,08$	0,80±0,030*	0,84±0,08
<x t(%)<="" td=""><td><math>30,0\pm0,26</math></td><td>28,8±0,68</td><td>31,6±0,41</td></x>	$30,0\pm0,26$	28,8±0,68	31,6±0,41
	25,6±1,24*	23,8+1,80*	28,8+2,30
Di (%)	73,9±4,50	72,5±1,78	60,7±0,89
	53,2±2,71*	52,3±1,06*	57,3±2,68

In each cell of the table, the upper values are before the treatment, the lower ones are after the treatment. \* - significant changes in the indicator in the course of treatment.

Along with this, the inclusion of synbiotics in the complex of treatment contributed to the acceleration of blood flow and improvement of venous outflow. In the 3rd group of patients, the rheography indices did not change significantly. That is, the mechanisms of implementation of the improvement in regional hemodynamics were somewhat different and were more pronounced in the 2nd group.

Immunity disorders play one of the central places in the pathogenesis of DC.

(Savelyeva G.M. et al., 2007; Kulakov V.I. et al., 2008)

attention to the study of the mechanism of action of MT as a method of monotherapy for local

Influence, as well as in combination with a synbiotic on the state of the immunocompetent system. Analysis of the dynamics of the immune status indicated the benefits of complex treatment. This was characterized by the restoration of the balance of the immunoregulatory T-cell subpopulations  $T_y$  and  $T_\mu$  and an improvement in their ratio due to a more distinct differentiation of T-lymphocytes in the thymus, as well as a significant increase (p <0.05) of the immunoregulatory index. The study of the immunological parameters of the patients of the 1st and 3rd groups revealed the restoration of only the immunoregulatory subpopulation of  $T_\mu$ -lymphocytes. At the same time, the immunoregulatory index did not change significantly.

A comprehensive assessment of the effectiveness of treatment showed the benefits complex therapy. So, at the end of the course of treatment, a significant improvement was noted

10% of patients in the 1st, 40% - in the 2nd group; improvement in 36.7% of patients 1st, 43.3% 2nd and 37.3% - 3rd group. 13.3% of patients in 1st, 0.6.7% - 2nd and 56.6 ° finished without treatment effect.

- 3rd group. The values of the Pearson criterion in the distribution of treatment results in the two main groups versus the comparison group were, respectively, x2 = 10, 2; p = 0.038

x46.2; p = 0.014. Long-term results of treatment showed that, on average, the achieved positive effects of treatment persisted for 3 months in 40% in the 1st group, in 66.7% in the 2nd group. After 6 months, the positive effect persisted in 23.3% of patients with the 1st; 46.7% - 2nd group. Exacerbationofthediseaseafter 6 monthsoccurredin 27.6% ofpain

1st, 0.3.3% - 2nd and 57.1% - 3rd groups. After 12 months, the positive effect persisted in 13.3% of patients in the 1st and 85% in the 2nd groups. Exacerbation of the inflammatory process after 12 months was noted in 46.7% of patients in the 1st group, and 66.7% in the 2nd and 20% in the 3rd groups. Higher treatment efficacy based on long-term results is verified by reliable values of the Pearson x2 criterion in two main groups versus the control group; 1 and 2  $x^2=23.8$ , p=0,026,  $x^2=28.5$ ;p=0,011).

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Thus, the results of the studies carried out made it possible to identify a number of positive effects of magnetotherapy in combination with a synbiotic in influencing various links in the pathogenesis of the pathology under study. The vasotropic effect plays an important role in the realization of the therapeutic effect of magnetotherapy. The consequence of the improvement in regional hemodynamics, which was observed in the majority of the surveyed, was a decrease in pathogenic infection in the large intestine, which, to a certain extent, contributed to the improvement of the functional state of the intestine.

Complex treatment potentiates and prolongs the analgesic and anti-inflammatory effects of magnetotherapy, has an immunocorrective effect, promotes the growth of saccharolytic microflora, restores the dynamic balance of intestinal microflora and improves the functional state of the intestine, positively affects the psycho-emotional state with DC. One of the important components of the therapeutic effectiveness of complex treatment is a decrease in the frequency of exacerbations of the disease and lengthening periods of remission, which determines the significance of the developed complex as a method of secondary prevention of reproductive system disorders in the studied category of patients.

The results of the conducted studies give grounds to regard the complex treatment of MT and synbiotics, consisting of Ganoderma Lucidum extract, as pathogenetically substantiated and effective in the treatment of patients with DC, which expands the arsenal of non-drug therapy means at various stages of therapeutic and restorative measures in the studied contingent of patients.

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