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NON-REFUTING VALUE OF LYMPHOTROPIC THERAPY FOR THE PREVENTION OF INTESTINAL COMPLICATIONS IN THE POSTOPERATIVE PERIOD IN ULCERATIVE COLITIS

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Abstract
Relevance: this article examines the definitions of lymph circulation in the intestinal mesentery system in normal conditions and in the UC model, as well as the management and treatment of patients with ulcerative colitis using lymphotropic therapy in the postoperative period.
The aim of this work is to study and evaluate the non-refuting value of lymphotropic therapy in patients in the complex treatment of UC in the postoperative period.
Material and methods — in serial experiments on animals — dogs, in an experiment, we have created a model of ulcerative colitis, and at the same time, before and after the creation of the model, we studied the lymph circulation in the intestinal mesentery. Based on the results of experimental studies, in a clinical setting, lymphotropic therapy was used in the complex treatment of ulcerative colitis in the postoperative period in 54 patients. To compare the results of lymphatic therapy, a control group of 43 patients was created who received conventional conventional treatment in the postoperative period.
Results: when using lymphotropic therapy in the complex treatment of ulcerative colitis, the number of intestinal complications in the postoperative period significantly decreases and the patient's stay in the hospital is reduced.

Key words: lymph circulation in the intestinal mesentery, ulcerative colitis, lymphotropic therapy.

Relevance

At the present time, the problem of diagnosis and treatment of ulcerative colitis (UC) is very urgent, with a tendency to steady growth in all countries of the world and is gaining rapid progress over the past decades [1]. Obviously, UC develops as a result of a pathological immune response to antigens of the intestinal microflora in the presence of a hereditary predisposition, has a chronic recurrent course [7; 14].

The age of patients makes UC in social terms the most active, the peak of which falls on the age group from 20 to 40 years [6, 11]. Although the exact pathogenesis of UC is still poorly understood, the theory that gut flora triggers an aberrant intestinal immune response and subsequent inflammation in genetically predisposed people is the most detailed theory [8].

According to the lymphatic theory of UC, primary changes develop in the lymph nodes of the mesentery and lymphoid follicles of the intestinal wall [3], which leads to lymphatic edema of the submucosal layer, resulting in destruction and granulomatous intestinal wall, which is the cause of intestinal complications in the postoperative period.

The role of opportunistic microflora in UC is being actively studied, which continuously stimulates the intestinal immune system and leads to a local allergic reaction [15, 5, 9].

Currently, conservative therapy is the basis for the treatment of UC, and surgical interventions are performed only in cases of its ineffectiveness or the development of complications in 10–20% of patients [12, 10]. The frequency of early postoperative complications to date is about 10% with planned interventions, emergency up to 40–45%, and mortality from 12% to 35% [2, 13].

Nevertheless, morphological criteria, reliable from the standpoint of evidence-based medicine [4], which could objectively assess the dynamics of the inflammatory process, based on this, and the results of various treatment methods, including after operations, have not yet been sufficiently developed. Unresolved issues make ulcerative colitis relevant in relation to its treatment in the postoperative period.

The aim of this work is to study and evaluate the effectiveness of lymphotropic therapy in patients in the complex treatment of UC in the postoperative period.

Material and methods

Only by determining the lymph circulation in the intestinal mesentery system in normal conditions and in ulcerative colitis, we could assess the value of lymphotropic therapy in the complex treatment of UC, and also prevent intestinal complications in the postoperative period.

For this, it was necessary to carry out a series of serial experiments on animals, which we conducted on animal dogs, based on the regulatory and methodological documents of the Republic of Uzbekistan, taking into account the requirements of the European Convention for the Protection of Vertebrate Animals used for Ex-

perimental Research or for other scientific purposes (ETS No. 123 , Strasbourg, 1986), as well as the requirements of the National Guidelines for the Care and Use of Laboratory Animals.

The experiments were carried out in mongrel dogs in the operating unit under the conditions of the Central Scientific Research Laboratory of the AGMI. In the initial series of experiments, the norm of lymph circulation in the intestinal system and its mesentery was studied by subserous injection of 0.1% solution of Evans blue dye in an amount of 0.1 ml and visually observed until the color disappeared completely — absorption of this solution from the mesentery of the animal's intestine, the time of which was determined by the stopwatch.

In a subsequent series of experiments on animal dogs, a model of the UC was created, and the model also studied the lymph circulation in the intestinal system and its mesentery, as in previous serial experiments. The results of the Evans dye absorption were compared in the norm and in the UC model, which convincingly showed that in the UC model, the lymphatic circulation in the mesentery and intestine slows down 2 times or more in relation to normal.

Based on the results of experimental studies, we considered it necessary to use lymphotropic therapy in the complex treatment of UC, which was carried out in 54 patients (main group) in the postoperative period. To contrast the results of lymphatic therapy, a control group of 43 patients was created, who in the postoperative period received the generally accepted traditional treatment — parenteral antibiotic therapy. Patients included in the main group, complex treatment in the postoperative period were supplemented with the use of endomesenteric lymphatic therapy according to the algorithm developed in the clinic. In both groups, the majority of patients were between 17 and 50 years old: in group I there were 54, in group II — 43.

Upon completion of the main stage of the operation in all patients of the main group, a polyvinyl chloride catheter for endomesenteric lymphatic therapy in the postoperative period was installed in the mesentery of the intestine, which was fixed with a thin catgut No. 0–1 in the mesentery of the intestine, the outer end of the catheter was removed to the skin of the anterior abdominal wall of the abdomen. Endomesenteric lymphatic therapy was performed for 4–5 days, once a day.

On the basis of our study, the sensitivity of microflora to antibiotics, isolated from the material of the mucous membrane of the colon, was also determined for further antibacterial therapy in the postoperative period. Endomesenteric lymphatic therapy was carried out through an installed PVC catheter into the mesentery of the intestine: first, to stimulate the lymphatic system, a glucose solution 5% — 50 ml + novocaine 0.5% — 50 ml with the addition of 5000 units was introduced dropwise heparin or lasix 64 units slowly over 40–60 minutes. Upon completion of the manipulation, a selected one dose of the antibiotic was connected to the same system, having previously dissolved it in 50 ml of a 0.5% solution of novocaine, and also introduced by drip. The use of heparin or lidase is justified by the fact that there is an increase in lymphocirculation, which in venous and lymphostasis leads to an increase in tissue drainage in these systems. Accordingly it is advisable to use heparin or lidase. On day 6, the endomesenterically inserted catheter was removed.

Lymphotropic therapy helps to improve the rheological properties of blood and lymph, increase lymph flow, normalize microhemolymphocirculation, complete removal of edematous fluid and toxic metabolites from tissues, and activate the detoxifying and immunological activity of the lymph nodes of the abdominal cavity. Thus, this method prevents unwanted complications in the postoperative period. Analysis of clinical data showed that no allergic reactions were observed with the lymphotropic administration of antibiotics.

Results and discussion

The results of experiments on animals — dogs showed that in the intestinal mesentery in the model of ulcerative colitis, lymphocirculation slows down significantly, 2 or more times, in contrast to the norm. This is the precursor of intestinal complications in the postoperative period in UC.

The results of clinical studies — endomesenteric lymphatic therapy in the postoperative period, convincingly showed the high efficiency of the use of specific measures to prevent the development of functional-dynamic intestinal obstruction in the postoperative period, while each component of the algorithm determined a targeted effect on a certain part of the pathogenetic mechanism of development of UC-specific complications. Endomesenteric lymphatic stimulation and lymphotropic antibiotic therapy helped to reduce interstitial edema and the concentration of toxins in the intercellular space, blockage of the lymphatic flow of toxins, toxic metabolites, bacteria and their decay products entering the general bloodstream by the lymphogenous route, increase the drainage function of lymphatic capillaries and normalize the lymphatic circulation at the level of the abdominal organs. Thus, in the postoperative period, the dynamics observed early recovery of intestinal motility (fig. 1).

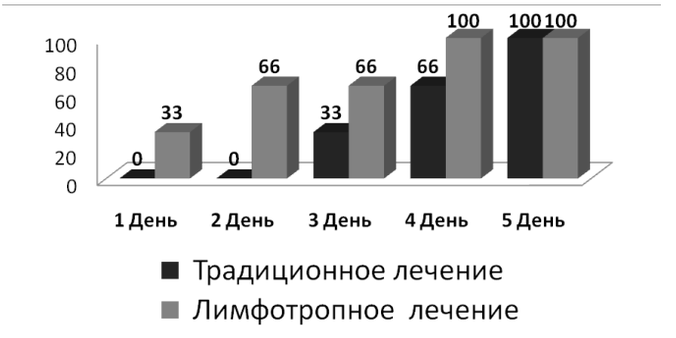

Fig. 1. Dynamics of restoration of the function of the gastrointestinal tract after surgery (the appearance of intestinal peristalsis by day in percentage)

Early restoration of intestinal motility prevents a number of unwanted complications in the postoperative period. Despite all this, postoperative complications were observed, which are shown in Table 1.

Table 1

The structure of intestinal complications observed in the postoperative period in the study groups

№	Postoperative complications	Main group		Control group	
		quantity	%	quantity	%
1	Inconsistency of anastomotic sutures	1	1,9	2	4,6
2	Early adhesive intestinal obstruction	1	1,9	1	2,3
3	Passage of the stoma	0	0	1	2,3
4	Intestinal fistulas	0	0	1	2,3
5	Functional intestinal failure	2	3,7	3	6,9
6	Abdominal abscesses	0	0	1	2,3
7	Suppuration of a postoperative wound	1	1,9	2	4,6
	Total:	5	9,2	11	25,6

These complications were inevitable due to the severe condition of patients who had complicated forms of UC at the time of surgery: cachexia, severe anemia and concomitant somatic diseases. Despite all this, complex endomesenteric lymphatic therapy in the postoperative period in UC made it possible to reliably improve the condition, reduce complications, mortality and average hospital stay in patients of the main group compared with the control group.

Conclusions

1. The difference in lymph circulation in the intestinal wall and its mesentery in normal conditions and in the model of ulcerative colitis convincingly explains the positive effect of the use of lymphotropic therapy in UC in the postoperative period.

2. The evidence of the irrefutable importance of the use of lymphotropic therapy in the complex treatment of UC in the postoperative period is a significant decrease in the number of intestinal complications.

3. When using lymphotropic therapy in the complex treatment of UC in the postoperative period, material costs for treatment and the length of stay of the patient in the hospital are reduced.

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