Original Article

# Application Of An Improved Method Of Lymphotropic Therapy In Patients With Surgical Abdominal Pathology In The Postoperative Period Based On Experimental Experiments

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## Abstract

Purpose of work: to improve the results of treatment of patients operated on for abdominal surgical pathology with the use of an improved method of lymphotropic therapy in the postoperative period based on experimental experiments.

Material and methods: the analysis of the results of surgical treatment of ulcerative colitis and acute widespread peritonitis of various origins in patients who were in the clinic of the Andijan State Medical Institute for the period from 2011 to 2021 was carried out. The patients were divided into two groups: the control group included patients (n=93) who received traditional methods of treatment in the postoperative period, and patients of the main group (n=98) received an improved method of endomesenteric lymphotropic therapy in the treatment complex.

Results: analysis of improved endomesenteric lymphotropic therapy for abdominal surgical pathology in the postoperative period shows that when using this method, the function of the gastrointestinal tract is restored faster: on the 2nd day, intestinal peristalsis and gas discharge resume on the 3rd day. In patients of the control group, the functional ability of the gastrointestinal tract is restored for 4-5 days.

Leukocytosis in the blood of patients of the main group significantly decreases on the 3rd day, and in patients of the control group on the 6th day after surgery.

**KEYWORDS:** acute peritonitis, ulcerative colitis, lymphotropic therapy.

## INTRODUCTION

Despite the improvement of diagnostic methods and improvement of the quality of therapeutic measures, postoperative complications and mortality in acute generalized peritonitis remain high. Particularly high mortality is observed in the development of abdominal sepsis against the background of the development of multiple organ failure, reaching from 18 to 37% of cases [1; 5; 9; 14]. Difficulties in solving the problem of peritonitis treatment lie in the fact that such factors as the fight against sources of intoxication of the body in the postoperative period are insufficiently corrected [2; 4; 12; 10].

Unfavorable in the prognostic value of the syndrome of acute widespread peritonitis is progressive endogenous intoxication of the body. It is associated with a lesion in the abdominal cavity. This process contributes to the development of functional intestinal failure with the translocation of the bacterial flora from the intestine to the abdominal cavity. These factors are the cause of deep metabolic disorders of the body, progressing and involving organs and systems in the process. In the future, these factors lead to multiple organ failure and death of the patient [4; 14].

The leading role in the initial stage of the development of the disease is played by the primary focus of intoxication, which often arises and develops as a result of destructive changes in the abdominal organs. One of these is ulcerative colitis, the etiological factors of which are still unknown [3; 11; 12; 13; 14].

The secondary focus of infection in abdominal surgical pathology is the lymph nodes of the abdominal cavity and retroperitoneal space. Against this background, microabscesses are formed in the lymph nodes, which

subsequently contribute to increased intoxication of the body. At the same time, congestion is noted in the lymphatic system of the abdominal organs of patients, which also contributes to increased intoxication of the body. In turn, all of the above negatively affect the infectious protective mechanisms of the intestine, which provide a barrier function [1; 2; 6; 11; 12].

The tertiary focus of intoxication in acute widespread peritonitis of various origins, including ulcerative colitis, is a violation of the function of the gastrointestinal tract in the postoperative period. At the same time, due to the development of intoxication of the body, dynamic intestinal obstruction may occur, which further exacerbates intoxication - endotoxicosis of the body [4; 5; 13].

However, on the full elimination of the primary focus of infection, in most patients, the deterioration and progression of intoxication of the body continue. Even with such a severe course of acute diffuse peritonitis and ulcerative colitis, the question of the advisability of antibiotic therapy remains unresolved [6; 9; 11; 14].

It has been proven that one of the ways to increase the effectiveness of antibiotic therapy and correct the body's immunity as a whole in acute diffuse peritonitis and ulcerative colitis is the introduction of drugs into the lymphatic system - endolymphatic or lymphotropic [9; 11; 12].

The search and development of new methods of targeted delivery of drugs to target organs is an urgent problem in modern medicine. One of these methods is lymphotropic therapy, which ensures the creation of sufficient and stable therapeutic concentrations of drugs in the lymphatic region of the lesion, and therefore in the target organ.

Purpose of work: to improve the results of surgical treatment of various abdominal surgical pathologies, using in the complex treatment an improved method of endomesenteric lymphotropic therapy in the postoperative period.

## MATERIALS AND METHODS

The analysis of the results of surgical treatment of ulcerative colitis and acute widespread peritonitis of various genesis of patients was carried out. These patients were hospitalized at the clinic of the Andijan State Medical Institute for the period from 2011 to 2021. All patients were divided into two groups: the first - control group included patients (n=93) who received traditional methods of treatment in the postoperative period. Patients in the second - the main group (n=98) in the postoperative period, additionally used our improved method of endomesenteric lymphotropic therapy in the complex treatment.

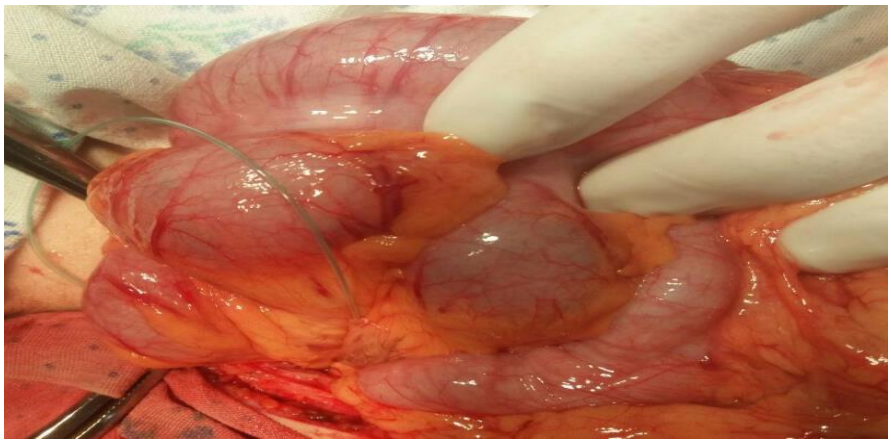
To determine the effectiveness of endomesenteric lymphotropic therapy in the postoperative period, we conducted several experimental experiments on experimental animals. The experiment created a model of ulcerative colitis. Against the background of the created model, we studied the effectiveness of our improved method of endomesenteric lymphotropic therapy. To start therapy, lymphostimulation was used. It is known that after lymphostimulation, the lymphatic drainage in the mesentery of the intestine improves dramatically while eliminating lymphostasis in the "lymphatic collector", which develops against the background of the inflammatory process. This is the initial link in the positive effect of the use of lymphotropic therapy in the postoperative period.

The results of experiments on experimental animals reliably proved the effectiveness of endomesenteric lymphotropic therapy in the postoperative period. Therefore, we decided to use our improved method of endomesenteric lymphotropic therapy in the clinic in patients.

The causes of peritonitis in the main group of patients (n=98), who used the improved method of endomesenteric lymphotropic therapy, were: acute destructive appendicitis in 29 patients (29.6%), perforated ulcer of the stomach and duodenum - in 18 patients (18.4%), destructive cholecystitis - in 7 patients (7.1%), gynecological destructive diseases - in 9 patients (9.2%), acute intestinal obstruction - in 5 patients (5.1%). In addition, the main group included patients with ulcerative colitis in the amount of 30 (30.6%). These patients also used the method of lymphotropic therapy.

The indications for the use of endomesenteric lymphotropic therapy for generalized diffuse peritonitis were the following: the presence of large changes in the retroperitoneal space in the form of infiltration, edema, swelling, hyperemia, and pyoinflammatory phenomena. In all patients of the main group with ulcerative colitis, endomesenteric lymphotropic therapy was included in the complex of treatment.

The method of applying lymphotropic therapy was as follows: after the completion of the main stage of the operation, all patients of the main group were intraoperatively installed in the mesentery of the intestine - endomesenterically, a polyvinyl chloride catheter invented by us - a special catheter. The catheter was fixed with a thin catgut into the mesentery of the intestine (Fig. 1. A). The outer end of the catheter was removed from the abdominal cavity through counter-openings and fixed to the skin of the anterior abdominal wall of the abdomen with a silk thread (Fig. 1. B).


a


b

**Fig.1.** Intraoperative placement of an endomesenteric PVC catheter (a), the outer end of this catheter (b) for lymphotropic therapy in the postoperative period.

**Fig. 2.** External view of the catheter for endomesenteric liphotropic therapy.

In some cases, when the operation ended with the imposition of an ileostomy, i.e. in case of total colectomy with preservation of a part of the rectum, a polyvinylchloride catheter was intraoperatively installed in the pararectal tissue for lymphotropic therapy in the postoperative period.

The applied method of establishing a catheter in the intestinal mesentery was improved by the fact that it was installed at a distance of 2 cm from the mesenteric edge of the intestine, and not in the region of the root of the mesentery. In this way, we avoid damage to blood vessels, the formation of hematomas in the mesentery, ligation or depression of large lymphatic or blood vessels by drugs injected into them.

In patients with acute diffuse peritonitis, first of all, attention was paid to the fight against the microbial factor. In this regard, in the postoperative period, through a catheter installed in the intestinal mesentery, immediately after lymphostimulation, lymphotropic administration of broad-spectrum antibiotics was started.

The antibiotic was administered by drip, using a compatibility test in advance. The sensitivity of the microflora of the abdominal cavity to antibacterial drugs was immediately determined.

When studying the microflora of the abdominal cavity, staphylococcus aureus, Escherichia coli and Pseudomonas aeruginosa were found in 84.5% of patients. In the rest, 15.5% of patients with acute diffuse peritonitis, combined types of microorganisms were found during inoculation.

The highest sensitivity of the abdominal microflora was found to cephalosporin drugs: ceftriaxone and cefazolin (84.7%). As soon as the sensitivity to the antibiotic was established, they immediately switched to the use of this drug for endomesentral lymphotropic use, to which the microbes were sensitive.

For lymphotropic therapy, a glucose-novocaine mixture was used as lymphostimulants in a ratio of 1:1 at a dose of 4 ml per kg of the patient's body weight. Lidaza (0.5 u/kg) or heparin (80 u/kg) was added taking into account the patient's blood clotting. Thymogen at a dose of 150 mcg, broad-spectrum antibiotics (III-IV generation cephalosporons: cefazolin or ceftriaxone) in a single therapeutic dose. For further antibiotic therapy, they were used taking into account the sensitivity of the abdominal microflora to them.

Endomesenteric lymphotropic therapy for acute diffuse peritonitis was carried out depending on the severity of the disease and the patient's condition once or twice a day for 4-5 days. With hemicolectomy for ulcerative colitis once a day, and with subtotal or total colectomy twice a day, also for 4-5 days.

## RESULTS AND DISCUSSION

The results of treatment of patients with the use of lymphotropic therapy in the postoperative period were compared with those of the control group of patients.

Against the background of complex therapy in the postoperative period with the use of an improved method of lymphotropic therapy in patients of the main group, intestinal motility resumed on the 2nd day. On the 3rd day, gas discharge was noted. In patients of the control group, weak peristaltic bowel movements appeared on the 3rd day after surgery. Only on the 4th-5th day the functional capacity of the gastrointestinal tract was restored in this group of patients.

Compared with the traditional method of treating acute diffuse peritonitis, leukocytosis in the blood of patients of the main group significantly decreased on the 3rd day. In patients of the control group, a decrease in this indicator was observed on days 5-6 after surgery.

The leukocyte index of intoxication returned to normal in patients of the main group on the 3rd day after the operation. In the control group of patients, this indicator returned to normal on the 6th day.

Also, there was a decrease in the erythrocyte sedimentation rate on the 3rd day in patients of the main group. In patients of the control group on the 6th day.

The results of the applied improved method of lymphotropic therapy in the complex of treatment in the postoperative period showed that the amount of fluid released from the abdominal cavity in patients of the main group began to decrease compared to the control group starting from the 2nd day after the operation (Table 1).

Table 1.

**Dynamics of exudate release from the abdominal cavity (ml) in the postoperative period with endomesenteric lymphotropic therapy and the traditional method of treatment**

| Method of treatment | 1 day | 2 day | 3 day | 4 day |
|---|---|---|---|---|
| Traditional treatment | 117,2±10,1 | 100,4±7,9 | 77,1±5,8 | 38,4±6,9* |
| Endomesenteric lymphotropic therapia | 108,4±9,2 | 60,3±9,6* | 20,2±4,1* | 5,7±1,3* |

* - the reliability of the difference compared to the original data (I<0,05).

Of particular importance is the volume of excreted fluid - secretion from the rectum after total colectomy with preservation of the rectum. At the same time, a special catheter for lymphotropic therapy was inserted intraoperatively into the pararectal tissue. The results show that the release of fluid - secretion from the rectum in the postoperative period against the background of the applied method of lymphotropic therapy decreases 2 times faster (table 2).

Table 2.

**Dynamics of liquid discharge from the rectum (ml) in the postoperative period against the background of lymphotropic therapy and the traditional method of treatment**

| Method of treatment | 1 day | 2 day | 3 day |
|---|---|---|---|
| Traditional treatment | 54,3±7 | 32,5±5 | 14,2±6 |
| Endomesenteric lymphotropic therapia | 52,5±6,1 | 16,2±4,3* | 3,4±2,5* |

* - the reliability of the difference compared to the original data (I<0,05).

As the inflammatory process decreases, the excreted secretion from the rectal mucosa decreases with the subsidence of edema in the stump area. In the main group, the volume of secretion decreases 2 times faster.

## CONCLUSION

In this way, in case of abdominal surgical pathologies, the method of lymphotropic therapy that we have improved in the complex of treatment of patients in the postoperative period has a positive effect on the restorative functions of the body, preventing complications from the underlying disease. Against this background, the cost of medicines is sharply reduced. Number of bed days i.e. the patient's stay in the hospital is reduced by 3.5±1.5 days compared to the traditional treatment of patients in the postoperative period.

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