VOL. 4, No. 1 **Journal of Osh State University. Medicine** 2025

Journal of Osh State University **Journal homepage:** https://medicine-oshsu.com/en

UDC 616.381-002-031.81-089
DOI: 10.52754/16948645_2025_4(1)_39

Article's History:
Received 27.02.2025 Revised 16.05.2025 Accepted 16.06.2025

Current approaches to the management of systemic inflammatory response syndrome in peritonitis of various aetiologies

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Abstract. Systemic inflammatory response syndrome (SIRS) in diffuse peritonitis remains one of the leading causes of multiple organ failure and high mortality, making the search for effective methods of its management a priority in clinical practice. The purpose of the study was to assess the effectiveness of a newly developed comprehensive approach to the management of SIRS in patients with diffuse peritonitis of various aetiologies. The surgical treatment outcomes of 46 patients treated at Osh City Clinical Hospital between 2021 and 2023 were analysed (20 with postoperative peritonitis, 22 with perforated gastric or duodenal ulcers, and 12 with complicated appendicitis). The treatment protocol included regional antibiotic lymphotropic stimulation, systemic antibacterial and detoxification therapy, immunocorrection with roncoleukin, and early enteral nutrition (EEN). Clinical manifestations of SIRS and laboratory markers (leukocyte count, leukocytic intoxication index, and procalcitonin) were evaluated. Preoperatively, all patients exhibited three to four signs of SIRS. Following implementation of the comprehensive treatment protocol, there was a consistent and marked reduction in the frequency of clinical manifestations and laboratory marker levels in cases with favourable progression. In the ulcer perforation group, 17 of 22 patients had only two SIRS signs by the 3rd day, and by days 9 to 10 the signs were absent. In appendicular peritonitis, clinical symptoms decreased by days 3 to 6, and by days 9 to 10 most of the 12 patients retained an average of two signs. The slowest improvement was observed in postoperative peritonitis, although by days 6 to 10 the number of signs was reduced to isolated cases. A parallel decrease in leukocytosis, leukocytic intoxication index, and procalcitonin was recorded in favourable cases. The findings support the feasibility of incorporating regional antibiotic lymphotropic stimulation in combination with immunocorrection and EEN into treatment protocols for diffuse peritonitis to effectively manage SIRS

Keywords: multiple organ failure; surgical infection; immunomodulation; antibacterial therapy; procalcitonin; leukocytic intoxication index; early enteral nutrition

Suggested Citation:
Ergeshbaev M, Ydyrysov I, Kurbanbaev O. Current approaches to the management of systemic inflammatory response syndrome in peritonitis of various aetiologies. J Osh State Univ Med. 2025;4(1):39–47. DOI: 10.52754/16948645_2025_4(1)_39

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Introduction

Diffuse peritonitis remains one of the most difficult and dangerous pathologies in abdominal surgery. Despite advances in surgery and antibiotic therapy, the high mortality and complication rate are conditioned by the development of systemic inflammatory response syndrome (SIRS), which can progress to sepsis and multiple organ failure. This highlights the need to find new methods for the diagnosis and correction of CVD aimed at improving clinical outcomes.

Updated recommendations of P.K.-T. Li *et al.* [1] regulate in detail the prevention and treatment of peritonitis during peritoneal dialysis, setting new standards for the frequency of episodes and the proportion of patients without infection. They revised the definitions of the forms of peritonitis and proposed improved approaches to antibiotic therapy and prevention, including correction of risk factors and patient education. The purpose of the recommendations was to reduce morbidity and mortality by improving standards of care. However, the effect of new therapies on the immune response and the lack of data on the complex correction of inflammation in severe forms of peritonitis were noted, which requires further research.

S.N. Abdreshov *et al.* [2] investigated the effect of the new antibiotic peptomide A-70 on morphological changes in mesenteric lymph nodes in experimental peritonitis. The researchers found that peritonitis causes a decrease in the area of the cortical structures of the lymph nodes and an expansion of their sinusoidal system, which indicates a decrease in the drainage, detoxification and immune functions of the lymphatic system, affecting the unfavourable outcome of the disease. The use of peptomide A-70 helped to reduce inflammation and toxic load, and also activated lymphopoietic function, increasing the size of lymph nodes and the parocortical T-zone. The results obtained confirmed the importance of immunomodulation and support of the lymphatic system in the treatment of peritonitis and indicate the prospects of using peptomide A-70 to improve the prognosis of the disease.

A.A. Andreev *et al.* [3] conducted a comprehensive analysis of existing biological models of acute peritonitis used in experimental studies. The paper proposed a classification of models based on the nature of the pathogen and the method of its introduction, including methods such as the introduction of foreign bodies, chemicals, bacterial infection, and combined effects. The researchers emphasise the importance of choosing a model that best reflects the clinical picture of the disease, which allows for a more accurate study of the aetiology, mechanisms of development, and severity of peritonitis, and evaluating the effectiveness of therapeutic measures. Moreover, the paper noted the need for further development of models for a more adequate reproduction of complex forms of peritonitis and a comprehensive assessment of the immune response. A.R. Saraev & Sh.K. Nazarov [4] applied a theoretical approach by analysing current data on the pathogenesis and classification of common peritonitis. They noted the diversity of views on the mechanisms of the disease and the lack of a unified classification, which makes it difficult to choose treatment and prognosis. The researchers emphasised the need for further study to create a more homogeneous and practical classification system. A paper by J. Zhang & Y. Huang [5] reviewed recent advances in the use of low-dose interleukin-2 (IL-2) for the treatment of immune diseases. The researchers emphasised that low doses of IL-2 selectively stimulate the proliferation of regulatory T cells, contributing to the restoration of immune homeostasis, while high doses activate effector T cells. Encouraging results of using low-dose IL-2 with minimal side effects are presented, which makes this method promising for modulating the immune status in inflammatory and immune disorders.

Y.-J. Chen *et al*. [6] conducted a randomised trial involving 140 patients with severe acute pancreatitis, comparing the effectiveness of parenteral and enteral nutrition. Before the start of therapy, the levels of interleukin-1β, interleukin-6, and tumour necrosis factor alpha in the groups did not differ significantly, but after treatment in the enteral nutrition group there was a significant decrease in these proinflammatory markers, an improvement in total protein and albumin, and a decrease in the incidence of pancreatic necrosis and pancreatic abscesses. The researchers concluded that enteral nutrition not only reduces the severity of the systemic inflammatory response, but also protects the intestinal barrier function. This study is of considerable value, as it is close in subject matter to the present work and emphasises the need for further clinical studies aimed at optimising nutritional support in conditions accompanied by a pronounced inflammatory response, including peritonitis of various origins.

The purpose of the present study was to evaluate the effectiveness of correction of systemic inflammatory response syndrome in diffuse peritonitis using lymphogenic technology (direct and indirect regional lymphostimulation), Roncoleukin immunocorrector, and early enteral nutrition.

Materials and Methods

46 patients with diffuse peritonitis of various origins were hospitalised in the departments of Osh City Clinical Hospital in the period from 2021 to 2023. Of these, 21 were women and 25 were men, and the age of the patients ranged from 25 to 74 years, while 32.6% of the patients were over 50 years old. The general distribution of patients is shown in Figure 1.

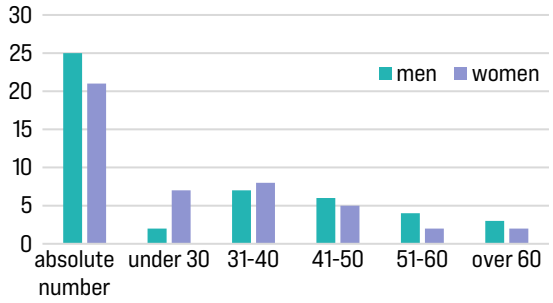

Figure 1. Distribution of patients by gender and age
Source: compiled by the authors

The study included patients with clinically and laboratory-confirmed diagnosis of diffuse peritonitis caused by postoperative complications (20 patients), perforation of gastric or duodenal ulcers (22 patients), and complicated acute appendicitis (12 patients). Patients with end-stage chronic diseases, immunodeficiency, and patients who refused to participate were excluded. The diagnosis and assessment of the severity of CVD were based on clinical signs: an increase in body temperature above 38°C or a decrease below 36°C, a pulse rate of more than 90 bpm, increased breathing above 20 respirations per minute or the presence of apnea, and laboratory parameters – the level of leukocytes, leukocyte intoxication index (LII) according to the method Ya.Ya. Calf-Calif and procalcitonin levels [7]. The study was performed before surgery and in the dynamics in the immediate period after surgery. When choosing correction methods, the genesis of peritonitis was considered, but all patients underwent regional lymphostimulation during surgery using the method developed by E.S. Dzhumabayev [8], immunocorrection with the drug Roncoleukin, and in the postoperative period, anti-inflammatory and detoxification therapy, considering the identified disorders of organ and system functions, and early enteral nutrition [9]. The patients were divided into three groups depending on the cause of peritonitis:

- Group 1 (n = 20): postoperative peritonitis;
- Group 2 (n = 22): perforation of gastric and duodenal ulcers;
- Group 3 (n = 12): generalised peritonitis in acute appendicitis.

At the time of surgery, all groups of patients underwent thorough abdominal rehabilitation aimed at removing the infection site and cleansing the peritoneal cavity of purulent masses and inflammatory exudate. Regional lymphostimulation was performed using a specialised technique aimed at activating the lymphatic system in the abdominal cavity to improve the immune response and accelerate the elimination of toxins [8]. Regional lymphostimulation was performed by inserting a microirrigator, a thin and flexible catheter, into the root of the mesentery of the small intestine in patients of the first group [10]. In the second group, a similar catheter was inserted through the circular ligament of the liver. Next, the microirrigator was removed through the surgical wound, which allowed continuing lymphostimulation for 4-5 days after surgery, maintaining an active effect on the lymphatic system in the postoperative period.

To stimulate the immune system and enhance the anti-inflammatory effect, an antibiotic-lymphotropic mixture was used, which included cefazolin 1.0 g, heparin 70 U/kg body weight, lidase 8-12 U, proserin 2 ml, and 0.25% novocaine solution in a volume of 10-15 ml. Immunocorrection was performed using Roncoleukin intravenously at a dose of 1 mg for a course of 6-7 days with 2-day intervals between injections. Antibacterial therapy was prescribed considering the clinical form and genesis of peritonitis: in the first group, ceftazoline 1.0 g twice daily was administered intravenously; in the second, a combination of cefazoline 1.0 g twice daily with metronidazole 100 ml twice daily; in the third – ceftriaxone 1.0 g with metronidazole according to a similar scheme. This approach simultaneously affected a wide range of aerobic and anaerobic microflora, providing comprehensive anti-infective protection.

Detoxification therapy included massive infusion support, considering the severity of each patient's condition. It provided correction of the water-electrolyte balance, maintenance of haemodynamics, and acceleration of the elimination of toxins from the body. Nutritional support for patients included EEN [11], which was started after intestinal motility was restored. This approach helped to maintain the function of the intestinal barrier, reduce the risk of secondary infections, and accelerate the overall recovery of the body. In addition to the main treatment methods, the procedure of gastric irrigation with an ozonated sodium chloride solution through a nasogastric tube was used. This manipulation helped to disinfect the gastric contents, improve microcirculation, and reduce the inflammatory response.

All patients underwent regular measurements of temperature, pulse rate, and respiration, and laboratory tests for leukocytes, LII, and procalcitonin before surgery, on days 3, 6, and 10 after surgery to assess the dynamics of CVR correction. The data obtained were processed by the method of variational statistics with the calculation of the arithmetic mean (M), the standard deviation (σ), and mean error (m). The statistical significance of the differences was assessed using the Student's t-test, with a significance level of $p < 0.05$. The relative frequencies are presented with the indication of the standard error of the fraction. Statistical processing was carried out using the programmes SPSS, Microsoft Excel 2015 and Statistica 7.0.

The study was conducted in accordance with the principles of the Helsinki Declaration [12] and national ethical standards [13,14]. The study protocol was approved by the local ethics committee of Osh City Clinical Hospital. All patients gave informed consent to participate in the study and to the use of their medical data for scientific purposes.

Results

During the study, special attention was paid to the dynamics of signs of systemic inflammatory response syndrome (SIRS) in patients with diffuse peritonitis of various origins. Changes in these signs were assessed at key stages of the postoperative period – on days 1, 3, 6-7, and 9-10. This approach allowed tracing the nature of the inflammatory process and evaluating the effectiveness of the applied complex of therapeutic measures, including regional lymphostimulation, roncoleukin immunocorrection, antibacterial therapy, and EEN. The distribution of patients according to the genesis of peritonitis was as follows: peritonitis after complicated operations on the abdominal organs – 20 cases; peritonitis due to perforation of gastric and duodenal ulcers – 22 cases; appendicitis complicated by peritonitis – 12 cases. Prior to surgery, all patients had three or four signs of CVD, reflecting the severity of the systemic inflammatory response at the time of hospitalisation. Table 1 shows a consistent change in the number of signs of CVD over time.

Table 1. Dynamics of CVD symptoms in diffuse peritonitis of various aetiology

Genesis of peritonitis	Number of patients	Day 1				Day 3				Days 6-7				Days 9-10			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Peritonitis as a result of complications after surgery (Group 1)	20	-	-	8	12	-	2	10	8	-	6	13	1	-	1	-	-
Peritonitis due to perforation of ulcers (Group 2)	22	-	-	14	8	-	4	2	1	4	3	3	-	-	-	-	-
Appendicitis complicated by peritonitis (Group 3)	12	-	-	4	8	-	1	7	4	1	4	1	1	-	-	-	-
abs. number		-	-	26	28	-	7	19	13	5	13	17	2	-	1	-	-
%		-	-	48.1	51.8	-	12.9	35.2	24.1	9.8	24.1	31.5	3.7	-	1.8	-	-

Note: 1, 2, 3, 4 – number of signs of the syndrome during this period

Source: compiled by the authors

When analysing the dynamics in the group of postoperative peritonitis, it was found that on the day 3 after surgery, positive clinical dynamics was observed in only 2 patients (10%), in whom the number of signs of CVD decreased from 3-4 to 2. The remaining patients retained 3-4 signs during this period, which indicated a slower relief of systemic inflammation. On days 6-7, the proportion of patients with two signs increased to 30% (n = 6), however, 65% of patients (n = 13) still had 3 signs, and one patient had 4. By days 9-10, only one case with 2 signs remained in this group, which confirms a more prolonged course of the inflammatory process and, probably, a more severe initial condition, and an unfavourable premorbid background.

In the group of patients with peritonitis due to ulceration, the initial severity of the condition was comparable (3-4 signs of CVD in all), but the dynamics of recovery turned out to be more favourable. As early as day 3, 77.3% of patients (n = 17) had only 2 signs of CVD, while only 5 patients (22.7%) had 3-4. By days 6-7, further improvement was observed: 18% (n = 4) of patients retained 2 signs, 27% (n = 6) had 3 signs, and the majority (n = 12) had no signs of CVD. On days 9-10, none of the patients in this group had any clinical criteria for CVD, which indicates complete relief of systemic inflammation and confirms the high effectiveness of the applied therapy complex in this category of patients. Patients with peritonitis, which complicated the course of destructive appendicitis, initially had 3-4 signs of CVD. On the 1st day after the operation, the clinical picture did not change. On day 3, the number of patients with 4 signs decreased, but 58% (n = 7) of patients still had 3 signs, while only one patient had 2 signs. By days 6-7, the positive dynamics increased: 33% (n = 4) of patients retained 2 signs, one patient had 1 sign, which can be regarded as a significant weakening of the systemic inflammatory response. However, on days 9-10, another 16.7% of patients in this group had 2 signs of CVD (n = 2), which indicates incomplete resolution of inflammation by the time the follow-up was completed.

In general, the analysis of the presented data showed that the rate of regression of CVD symptoms differed depending on the genesis of peritonitis. The most favourable dynamics was observed in patients with perforated ulcers, which is probably conditioned by a more localised source of infection and a lower degree of microbial contamination of the abdominal cavity compared with postoperative peritonitis. The least pronounced improvement was observed in patients with postoperative peritonitis, which may be explained by the severe initial condition, the presence of stable nosocomial microflora, and more pronounced endogenous intoxication.

In parallel with the clinical signs, the dynamics of laboratory parameters were recorded – the level of leukocytes, leukocyte intoxication index (LII), and procalcitonin. Prior to surgery, all patients had marked

leukocytosis, increased blood pressure and procalcitonin concentration, reflecting a systemic inflammatory response and the presence of severe infection. In the postoperative period, with a favourable course, the indicators gradually decreased, but in the group of postoperative peritonitis, their levels remained higher at all follow-up periods, which confirms the data on a more protracted inflammatory process in this category.

The appointment of the Roncoleukin immunocorrector contributed to the activation of immune defence, which was manifested by a faster decrease in the frequency of signs of CVD and normalisation of laboratory parameters in groups with a milder course of the disease. The use of complex therapy, including lymphogenic technology and EEN, helped to prevent the progression of the systemic inflammatory response, shorten the time to maintain the maximum severity of CVD, and probably reduce the risk of severe complications.

Thus, dynamic monitoring of clinical and laboratory signs of CVD has shown that complex therapy is effective in all the studied groups, however, the degree and rate of regression of inflammatory manifestations depend on the genesis of peritonitis. In the treatment of diffuse peritonitis, no monotherapy provides complete elimination of the inflammatory process in the abdominal cavity, which necessitates the individual selection of a comprehensive correction of systemic inflammatory response syndrome. Regional lymphostimulation was used as a basic element of therapy for peritonitis of various origins, due to the key role of the lymphatic system in the pathogenesis of inflammation: in the early stages, it performs a protective function, but as microflora and its decay products accumulate, it can contribute to the generalisation of the process.

In conditions of postoperative peritonitis, lymphostimulation was performed simultaneously and continued through a fixed microirrigator installed in the root of the mesentery of the small intestine. In case of a perforated ulcer, prolonged lymphostimulation was used according to a specialised technique. In all clinical cases, the mandatory stage was the rehabilitation of the abdominal cavity. For patients with postoperative peritonitis, the use of a nasogastric tube for early enteral nutrition was of particular importance, which helped to reduce the frequency of infectious complications, reduce the duration of hospitalisation, and reduce the economic costs of treatment.

Complications and short-term mortality remain key clinical endpoints in diffuse peritonitis and determine the effectiveness of both surgical and drug strategies. According to N.V. Lebedev *et al*. [15], with the development of abdominal sepsis and toxic shock, mortality reaches extremely high values, which emphasises the severity of the disease and the need for an adequate treatment algorithm. Similarly, B.G. Prasad & K.B. Reddy [16] noted that in a number of clinical series, the total hospital/30-day mortality in acute diffuse peritonitis is approximately 15-35% or higher, depending on the degree of organ dysfunction, the presence of malignant pathology, and delay in care.

In the randomised protocol of COOL, A.W. Kirkpatrick *et al*. [17] showed that in severe complicated intra-abdominal sepsis, outcomes largely depend on the degree of systemic expression of inflammation and the effectiveness of primary sanitation, and on the chosen tactics – primary closure or open abdominal cavity with active deseria. Subsequent retrospective analyses and clinical reports have shown that the open abdominal cavity (OA) strategy does not provide a clear survival advantage and is associated with a higher incidence of early postoperative complications and the development of ventral hernias, whereas primary closure is not always possible with poor control of the source of infection. Observations of T. Guagni *et al*. [18] pointed to the existing clinical equiposition and the need for individual decision-making in severe peritonitis.

In the light of these data, the results of this study correlate with the fact that patients with postoperative peritonitis had a higher incidence of complications and a more prolonged resolution of CVD compared with the perforation and appendicitis groups. This is consistent with the role of nosocomial contamination, polyresistant flora, and initial severity of the condition described in the literature as factors that worsen the prognosis [15,16]. The complex used in this study – regional lymphostimulation, EEN, Roncoleukin immunocorrection, and targeted antibacterial/detoxification therapy – was associated in most patients with preventing further progression of the process and reducing the frequency of transition to severe multiple organ failure. This effect correlates with data on the beneficial effect of EEN and complex therapy on reducing infectious complications and improving clinical outcomes in surgical patients.

The data of this study are supported by the results of a systematic review and meta-analysis of J. Burcharth *et al*. [19], which evaluated the effect of early enteral nutrition on mortality after major emergency abdominal surgeries. An analysis of seven included studies with a total of 1,309 patients showed that early initiation of enteral nutrition was associated with a significant reduction in mortality (odds ratio 0.59; 95% confidence interval 0.34-1.00) compared with standard therapy. No significant problems with the safety of EEN were identified, and trends towards a decrease in the incidence of sepsis and postoperative pulmonary complications were also noted, although the level of evidence was assessed as low or very low. The researchers emphasised the need for further high-quality randomised trials to clarify the optimal start time and composition of enteral nutrition.

A.A. Savchenko *et al*. [20] investigated the state of cellular and humoural immunity in 50 patients with diffuse purulent peritonitis (DPP). The analysis of the

lymphocytic phenotype was performed by flow cytometry, and the concentration of immunoglobulins and cytokines was performed by enzyme immunoassay (ELISA). The results showed leukocytosis, relative lymphopenia, an increase in pro-inflammatory cytokines, and a decrease in cytotoxic and activated T-lymphocytes in RGP. With an unfavourable outcome, there was a decrease in γδT lymphocytes and NKT cells, with an increase in B1 cells. With a favourable outcome, there was a decrease in NK cells and an increase in Th2 lymphocytes, which was accompanied by an increase in IL-4 and IgA, which are important for immunopathogenesis and a favourable outcome. These data emphasise the key role of immune regulation in the prognosis of RGP and support the need for immunocorrection, which corresponds to the complex of therapies used in this study. D. Rittirsch *et al.* [21] emphasised the key role of uncontrolled activation of the complement system in the development of multiple organ failure in sepsis and systemic inflammatory response. Their data confirm the importance of modulating the immune response to prevent organ damage, which reinforces the rationale for the use of complex immunocorrective therapy for severe intra-abdominal infections and diffuse peritonitis.

Conclusions

The conducted study comprehensively evaluated the effectiveness of the proposed treatment regimen for patients with diffuse peritonitis, considering the need for a multi-stage approach aimed at eliminating the source of infection, correcting systemic disorders, and maintaining the functional state of vital organs. A comparison of the tasks set with the results obtained showed that all the goals outlined at the planning stage of the study were fully achieved. Analysis of clinical data has confirmed that the use of combination therapy, including targeted abdominal rehabilitation, antibacterial effects, detoxification measures, and early restoration of enteral nutrition in combination with immunocorrection, significantly reduced the risk of developing multiple organ failure. A decrease in the incidence of complications and mortality was noted in patients without severe initial multisystem dysfunction, which indicates the high clinical significance of the proposed management algorithm.

An important aspect of the study was the confirmation that the timely initiation of enteral nutrition contributes to the preservation of intestinal barrier function, prevents translocation of microflora, and reduces the severity of systemic inflammatory response. This allows considering it not as an auxiliary, but as an obligatory component of treatment that requires standardisation in clinical practice. The issues of optimising the dosages and timing of the appointment of individual components of therapy remain unresolved, depending on the severity of the condition, concomitant diseases, and the age of the patient. A promising area of further research is the in-depth study of immunological markers that allow more accurately predicting the outcome of the disease and individualise the treatment approach, and the development of protocols that integrate modern methods of nutritional support and immunomodulation into the comprehensive treatment of diffuse peritonitis.

Acknowledgements

None.

Funding

None.

Conflict of Interest

None.

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Аннотация. Ар кандай келип чыгыштагы чачыраган перитонит учурунда системалуу сезгенүү реакциясы синдрому (ССРС) полиоргандык жетишсиздиктин жана өлүм-житимдин негизги себептеринин бири бойдон калууда, ошондуктан аны коррекциялоонун натыйжалуу ыкмаларын издөө клиникалык практиканын артыкчылыктуу багыты болуп саналат. Бул изилдөөнүн максаты – ар кандай келип чыгыштагы чачыраган перитонит менен ооруган бейтаптарда ССРСти коррекциялоодо иштелип чыккан комплекстүү ыкманын натыйжалуулугун баалоо болгон. 2021-2023-жылдары Ош шаардык клиникалык ооруканасында дарыланган 46 бейтаптын хирургиялык дарылоо жыйынтыктары талданды (20 – операциядан кийинки перитонит, 22 – ашказан же он эки эли ичеги жарасынын тешилиши, 12 – татаалдашкан аппендицит). Комплекстүү дарылоодо регионалдык антибиотик-лимфотроптук стимуляция, системалуу антибактериалдык жана дезинтоксикациялык терапия, ронколейкин препараты менен иммунокоррекция жана эрте энтералдык тамактандыруу колдонулган. Клиникалык белгилер жана лабораториялык көрсөткүчтөр (лейкоциттер, лейкоцитардык интоксикация индекси, прокальцитонин) бааланган. Операцияга чейин бардык бейтаптарда ССРСтин үчтөн төрткө чейин белгиси аныкталган. Комплекстүү дарылоо киргизилгенден кийин оорунун жагымдуу жүрүшүндө клиникалык белгилердин жана лабораториялык көрсөткүчтөрдүн жыштыгынын туруктуу жана олуттуу төмөндөшү байкалган. Жара тешилиши болгон топто 22 бейтаптын 17синде үчүнчү күнү белгилердин саны экиге чейин азайган, ал эми тогузунчу-онунчу күндөргө карата белгилер толугу менен жоголгон. Аппендициттик перитонитте клиникалык симптомдор үчүнчү-алтынчы күндөргө карата азайган; тогузунчу-онунчу күндөргө карата бейтаптардын көбүндө орто эсеп менен эки белги сакталган. Эң жай оң динамика операциядан кийинки перитонитте байкалган, бирок бул топто да алтынчы-онунчу күндөргө карата белгилердин саны бирдиктүү деңгээлге чейин азайган. Жагымдуу жүрүштө лейкоцитоз, лейкоцитардык интоксикация индекси жана прокальцитонин деңгээлинин төмөндөшү катталган. Изилдөөнүн жыйынтыктары чачыраган перитонитти дарылоодо ССРСти натыйжалуу коррекциялоо үчүн регионалдык антибиотик-лимфотроптук стимуляцияны иммунокоррекция жана эрте энтералдык тамактандыруу менен айкалыштырып колдонуу максатка ылайыктуу экенин негиздейт

Негизги сөздөр: полиоргандык жетишсиздик; хирургиялык инфекция; иммуномодуляция; антибактериалдык терапия; прокальцитонин; лейкоцитардык интоксикация индекси; эрте энтералдык тамактандыруу

Современные возможности коррекции синдрома системной воспалительной реакции при перитоните различного генеза

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Аннотация. Синдром системной воспалительной реакции (ССВР) при разлитом перитоните остаётся одной из ведущих причин полиорганной недостаточности и высокой летальности, поэтому поиск эффективных методов его коррекции имеет первоочередное практическое значение. Целью исследования было оценить эффективность разработанного комплексного подхода к коррекции ССВР у больных с разлитым перитонитом различного генеза. Проанализированы результаты хирургического лечения 46 пациентов, пролеченных в Ошской городской клинической больнице в 2021-2023 годах (20 – послеоперационный перитонит, 22 – перфорация язвы желудка или двенадцатиперстной кишки, 12 – осложнённый аппендицит). В комплексном лечении использовали региональную антибиотиколимфотропную стимуляцию, системную антибактериальную и дезинтоксикационную терапию, иммунокоррекцию препаратом ронколейкин и раннее энтеральное питание (РЭП). Оценивали клинические признаки ССВР и лабораторные маркёры (лейкоциты, лейкоцитарный индекс интоксикации – ЛИИ, прокальцитонин). До операции у всех пациентов было выявлено от трёх до четырёх признаков ССВР. После внедрения комплекса лечебных мероприятий отмечено последовательное и выраженное снижение частоты клинических признаков и уровней лабораторных маркёров при благоприятном течении заболевания. В группе с перфорацией язв у 17 из 22 пациентов к третьим суткам число признаков уменьшилось до двух, а к девятым-десятым суткам признаки ССВР отсутствовали. При аппендицитном перитоните клиническая симптоматика уменьшалась к третьим-шестым суткам; к девятым-десятым суткам у большинства из 12 пациентов сохранялось в среднем по два признака. Наиболее медленная положительная динамика наблюдалась при послеоперационном перитоните, однако и в этой группе к шестым-десятым суткам число признаков уменьшалось до единичных. Параллельно регистрировалось снижение лейкоцитоза, ЛИИ и уровня прокальцитонина при благоприятном течении. Результаты исследования обосновывают целесообразность применения региональной антибиотиколимфотропной стимуляции в сочетании с иммунокоррекцией и РЭП в протоколах лечения разлитого перитонита для эффективной коррекции ССВР

Ключевые слова: полиорганная недостаточность; хирургическая инфекция; иммуномодуляция; антибактериальная терапия; прокальцитонин; лейкоцитарный индекс интоксикации; раннее энтеральное питание