

DISORDERS HOMEOCINESIS IN PERITONITIS AND ITS CORRECTION

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ABSTRACT

Objective. The study of the characteristics of peritonitis in people of working age with the establishment of the current state of the microflora and the development of treatment methods. **Materials and methods.** The study was conducted in 150 patients (20-60 years) with various forms of peritonitis. **Results.** The combined use of thymalin, furacillin solution and lymphotropic antibiotic therapy contributed to the rapid elimination of surgical infection.

Key words: acute peritonitis, thymalin, cellular immunity, peritonitis stages.

INTRODUCTION

Bacterial contamination of the abdominal cavity remains a rather difficult problem in the modern treatment of peritonitis. According to many researchers [1, 3, 5, 7], with common forms of both purulent inflammation of the peritoneum and serous-fibrous variants of peritonitis, an increase in microflora is detected in most patients. All this leads to a deterioration in the patients' condition, hemodynamic disorders, and functional changes in internal organs. Modern studies record anaerobic (87%) and mixed (23%) infections, which are a common cause of

purulent-inflammatory processes in the abdominal cavity, leading to severe peritonitis.

According to the results of researchers [2, 3, 4, 8], in case of peritonitis, *E. coli* (48%), staphylococcus (15.1%), *Pseudomonas aeruginosa* (12.7%), and *Proteus* (21%) are sown in the microbial flora. If some authors note that in 90% of cases the microflora is sensitive to gentamicin, then sensitivity to kanamycin is preserved in 70% of patients [3, 6, 10], while others [2, 5, 11] note fairly satisfactory results (up to 98%) with the introduction of 4th generation antibiotics.

Quite important attention is paid to targeted correction of immunity, which can cause various reactions of the immune system already in the early stages of the disease, the dynamics of which correspond to the characteristics of the clinical course and severity of the inflammatory process of the disease. Lymphotropic administration of antibiotics and lymphotropic immunostimulation occupy the forefront of treatment methods [1, 5, 9]. However, an integrated approach, program relaparotomy, closed and open methods of sanitation of the abdominal cavity (laparostomy), extracorporeal detoxification, gravitational surgery remain the methods of choice and the discussion of these methods continues [12, 13, 14, 15].

The purpose of the study was to study the characteristics of peritonitis in people of working age with the establishment of the current state of the microflora and the development of treatment methods.

Materials and methods. The study was conducted in 150 patients (20-60 years old) with various forms of peritonitis who were treated in the surgical department of the 7th city hospital of Tashkent City during the period from 07/01/2020 to 12/01/2020: local (37.6%), diffuse (38.9 %), spilled (23.5%). The causes of peritonitis were: acute appendicitis (56.7%), acute cholecystitis (7.1%), perforated gastric ulcer (26.5%), gynecological (9.7%) peritonitis. Depending on the method of treatment, patients were divided into 3 groups: 1st - 85 (56.7%); 2nd - 24 (48.0%); 3rd - 41 (27.3%). The reactive stage of peritonitis was in 46 (69%), toxic - 68 (45.3%), terminal - 36 (24%). Local peritonitis was detected in 62 (41.3%) patients; diffuse – 58 (37.8%), diffuse – in 30 (20%). Microbiological, immunological, and biochemical studies were carried out.

Statistical processing was carried out in the Excel-2017 program, taking into account the t value and the student coefficient.

Results and discussion: Microbiological examination of the contents of the abdominal cavity (during surgery) revealed *Escherichia coli* in 50.7%, *Staphylococcus aureus* in 14.4%, *Streptococcus* in 10%, *Proteus* in 6.2%, 4. 3% enterococcus, 2.4% - *Pseudomonas aeruginosa*. Associated infections were represented by *Escherichia coli* and *Staphylococcus aureus* (5.3%), *Escherichia*

coli and streptococcus (2.4%), Escherichia coli and Proteus (1.9%), the absence of bacterial growth was detected in 2.4% of patients. Considering the relationship between the nature of the bacterial flora depending on the nosological cause of peritonitis, a high percentage of associations was identified in patients with appendicitis. In all surgical pathologies of the abdominal cavity, during the formation of peritonitis, a clear predominance of Escherichia coli was noted. It should be noted that the delayed results of bacteriological studies forced empirical antibacterial therapy in the postoperative period.

According to the data obtained, the isolated flora was resistant to tetracycline in 61.7%, methicillin in 56.6%, benzylpenicillin in 53.8%, and furacillin solution in 51.38%. Less pronounced resistance was detected to streptomycin (48.2%) and neomycin (44.1%). The vegetative flora was highly sensitive to gentamicin (75.1%), cloforan (71.4%), kanamycin (70.1%), ampicillin (69%), chloramphenicol (69.9%), erythromycin (63.3%), ampiox (63.0%).

It was noted that in 44.3% of cases the flora was resistant to 1-2 antibiotics, in 29.5% - to 3-4; in 19.8% to 8 or more antibiotics at the same time. Only in 6.8% of cases the isolated strains turned out to be sensitive to all antibiotics.

A study of cellular immunity revealed a decrease in the relative and absolute number of T-B lymphocytes ($p < 0.05$). The maximum decrease in these results was observed in diffuse and diffuse peritonitis. The content of "zero" lymphocytes in local unlimited peritonitis was 687.12 ± 57.7 cells/ μl , local limited - 643.1 ± 57.7 cells/ μl , spilled 694.1 ± 52.2 cells/ μl .

The study of humoral immunity showed a significant increase ($p < 0.05$) in immunoglobulins A, M, G, with the highest level of IgM, characteristic of the primary immunological response. As the inflammation process progressed, the content of IgA and IgG increased more significantly, and IgM decreased.

The content of T-B lymphocytes, as the process spread, decreased, which is associated with a decrease in the compensatory and adaptive capabilities of the body and a violation of protein metabolism. A decrease in the phagocytic activity of neutrophils was also noted, which may indicate the depletion of protective mechanisms as the process progresses.

It is impossible not to note a significant decrease in the relative (up to $41.1 \pm 1.38\%$ and absolute (1099.3 ± 86.7 cells/ μl) number of T-lymphocytes with anaerobic-aerobic association of microflora, E. coli (46.18 ± 1.3 and 894.6 ± 72.4 cells/ μl). At the same time, the number of B-lymphocytes decreased with E. coli to $12.6 \pm 0.67\%$; 294.8 ± 18.4 cells/ μl and increased significantly with the association of aerobic microflora. up to $19.23 \pm 0.27\%$ ($p < 0.01$) and 593.6 ± 22.6 cells/ μl ($p < 0.001$).

The identified changes indicate a violation of the differentiation of immunocompetent cells and their unambiguous involvement in the infectious process of various etiologies.

When considering the content of immunoglobulins, it was found that IgA in peritonitis increases significantly with anaerobic-aerobic microflora (293.9 ± 16.7 mg%) and staphylococcal infection (210.6 ± 9.0 mg%). The IgM level was increased in all studied groups, but more significantly in anaerobic-aerobic microflora. In turn, a particularly pronounced increase was noted in IgG with staphylococcal and gram-negative microflora ($p < 0.001$).

In acute peritonitis, the development of immune reactions is largely determined by the type of pathogen with gross changes in the cellular and humoral components. The condition of patients with local peritonitis (group 1) was moderate and they received standard antibiotic therapy and intravenous infusion therapy. The severe course of diffuse and diffuse peritonitis (group 2) was due to late hospitalization and older age. This category of patients received complex treatment, including washing the abdominal cavity with furacillin and 10% saline; antibiotics were administered lymphotropically. Patients of group 3 were given the drug Thymalin (lymphotropically) as part of complex treatment, which was noted to have a pronounced therapeutic effect.

A comparative assessment of treatment programs for peritonitis revealed: the most rapid decrease in leukocytes and "0" lymphocytes, the increase in T, B-lymphocytes in the blood is most pronounced with lymphotropic administration of thymalin. Humoral immunity data showed a noticeable improvement when thymalin was included in the treatment plan.

The immunological changes that occur in the body of patients under the influence of thymalin affect various aspects of the immune system. It is the combined use of thymalin, furacillin solution and lymphotropic antibiotic therapy that contributes to the rapid elimination of surgical infection and the subsidence of inflammatory processes in the abdominal cavity. Unlike basic therapy, it can be considered that the method is the most effective, safe, accessible with high therapeutic efficacy.

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