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ADAPTED BACTERIOPHAGES IN THE PREVENTION OF POSTOPERATIVE PURULENT-INFLAMMATORY COMPLICATIONS AFTER LAPAROSCOPIC CHOLECYSTECTOMY IN ELDERLY AND SENILE

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Abstract. A comparative analysis of the postoperative purulent-inflammatory complications of surgical treatment of acute destructive cholecystitis in elderly and senile people with laparoscopic cholecystectomy (LC) and LC using therapeutic adapted bacteriophages (LC + BP). Patients were divided into two groups. In the first group (comparison group, n = 214), after the LC, a focus of inflammation with a solution of decametoxin was reorganized 0.02 %.

In the second group (main group, n = 125) adapted BP were used to irrigate the focus of inflammation. Using the LC + BP method for sanitation of the abdominal cavity and postoperative wound, it made it possible to: reduce the development frequency of postoperative purulent-inflammatory complications from 7.9% to 2.4% (p = 0.037) in relation to patients of the comparison group (LC).

Keywords: acute cholecystitis, laparoscopic cholecystectomy, bacteriophages, decamethoxine, purulent-inflammatory complications.

Introduction. An elderly age is a risk factor for acute cholecystitis [1, p. 2]. Currently, 60% of patients hospitalized in surgical hospitals regarding acute calculous cholecystitis are the elderly and senile people [2, p. 3].

With age, in elderly and senile patients, general maladaptation and disorganization of the functional systems of the body increases. This aggravates the course of the disease of acute destructive cholecystitis (ODC) [3, p. 2]. To combat purulent-inflammatory diseases and complications, new types and classes of antibiotics are developed. However, this does not save the situation, because stability develops rapidly, which contributes to the globalization of the problem of antibiotic resistance. The toxic effects of antibiotics that aggravate polyorgana deficiency, as well as their relative low concentration in infected tissues, served as the basis for the search for new treatment methods, with which it would be possible to improve the treatment of patients with ODC.

Recently, the positive qualities of therapeutic BP have been noted. Advantages of BP: lack of toxic effect on the body, the development of allergic reactions, dysbiosis. Contraindications to the use of BP are not established. In the saints with this, the use of BP, active in relation to many microorganisms secreted in patients with ODC, complicated peritonitis, can significantly increase the effectiveness of the treatment of patients of the specified pathologists in the age group over 60 years old.

The aim of the study – conduct an analysis of postoperative purulent-inflammatory complications of surgical treatment of acute destructive cholecystitis in elderly and senile people with LC and LC + BP.

Materials and Methods. The work was based on clinical observations and studies of 339 ODC patients at the age of 60, who conducted LC. There were 63 (18.6%) men, women - 276 (81.4%). At the age of 60 to 74 years - 225 (66.4%) patients, from 75 to 89 years - 108 (31.9%), aged 90 years or more - 6 (1.7%) patients. There were 56 (18.6%) men, women - 247 (81.4%).

The diagnosis of acute cholecystitis was assessed according to Tokyo Guidelines, based on clinical findings (Murphy sign; right upper quadrant pain, tenderness, palpable mass, fever), laboratory inflammation tests and an ultrasound exam confirming gallstones and thickness of the gallbladder wall. The management of acute cholecystitis was according to the Tokyo Guidelines 2018 flowchart [4, p. 58] based on the severity of symptoms, ASA and CCI index. Complex therapy included the correction of the vital organs and systems of the body, including antibiotic therapy. The drugs of the choice were cephalosporins in combination with ornidazole. By the method of implementing the surgical intervention program, patients were divided into two groups. In the first group (comparison group, n = 214), after the LC, a focus of inflammation with a solution of decametoxin 0.02 %. In the second group (main group, n = 125), adapted BP was used to irrigate the focus of inflammation. Also, a trocar wound through which the gall bladder was extracted from the abdominal cavity was sanctified by a BP solution and in the postoperative period the BP fractionally through tubular drainage was introduced into the abdominal cavity.

Results. Postoperative purulent-inflammatory complications were observed in both groups (Table 1). In the main group, intra -abdominal complications amounted to 0.8 %, wound 1.6 %, in the comparison group - 2.8 and 5.1 %, respectively.

Table 1

The nature of postoperative purulent-inflammatory complications in the main group and the comparison group

The nature of postoperative purulent-inflammatory complications	The main group, n = 125		Comparison group, n = 214		P
	n	%	n	%	
Infiltrate of the abdominal cavity	1	0,8	5	2,3	0,301
Abscess of the abdominal cavity	0	0	1	0,5	0,700
Infiltrate or seroma of postoperative wounds	2	1,6	5	2,3	0,645
Suppuration of wounds	0	0	6	2,8	0,059
Total purulent-inflammatory complications	3	2,4	17	7,9	0,037

Note. P – is the significance of the differences between the main group and the comparison group.

The prevailing amount of purulent-inflammatory complications in groups arose in patients with oh, complicated by local or diffuse purulent peritonitis, and perivesical abscess.

A comparative analysis of purulent-inflammatory complications between the comparison group (LC) and the main group (LC + BP) showed a decrease in their amount from 7.9% to 2.4%. At the same time, purulent complications in the main group were not observed.

In patients with suppuration of the wound in the postoperative period, the results of the results of the bacteriological examination of the wound departure are of certain interest. So, in 73.3% of patients with gallbladder empyema, serous peritonitis of the flora was represented by monoculture. In patients with purulent peritonitis, a periwest abscess of 76.7% -86.6% of cases, microorganism associations were identified in the wound. Among the gram -positive flora, Staph was most often determined. Aureus (56.7% of patients), Staph. Epidermidis (26.7% of patients), as well as Staph. Faecalis (13.3% of observations). Among gram-negative bacteria, E. Soli (66.7%of patients) prevailed, much less commonly bacteria of the genus Proteus (6.7%), Pseudomonas aeruginosa (10%), Klebsiella (3.3%) cases.

Microbial associations were mainly represented by: Staph. Aureus and Proteus; Staph. aureus and E. coli; Staph. Aureus, P. Aeruginosa and Proteus; Staph. Aureus and P. Aeruginosa.

The allocated strains from wound exudate had different sensitivity to antibacterial drugs. Staphylococcus Aureus strains were resisted from 46.7% to 96.7% of cases. The entire gramnegative microflora was very resistant to widely used antibiotics - 53.3% - 93.3%. The most effective in relation to the identified microorganisms were ceftriaxone, ceftasim, cephepim, ciprofloxacin, amikacin. However, and 36.7% of cases were observed in 23.3% to these drugs. The most active of the group of semisynthetic penicillins was ampicillin sulbactam.

It should be noted that during the stay in the hospital, the special knowledge in the structure of the wound infection acquired hospital strains of pathogens: Enterococci, coagulase negative staphylococci, pseudonades, enterobacter. The

indicated microorganisms were resistant to antibiotics, which extremely complicated the treatment of patients.

Discussion of results. The use of BP allowed the main group to avoid the development of postoperative purulent complications. This is due to the high sensitivity of pathogens to therapeutic bacteriophages. These patients did not develop purulent complications after surgery, and a significant decrease in the frequency of the abdominal infiltrate, seroma and infiltrate of the postoperative wound was noted. The reason for a decrease in the number of intra-abdominal and wound purulent-inflammatory complications in the main group with the prevention of wound and intra-abdominal infection using adapted BP for intraoperative irrigation of the abdominal cavity and a trocar-wound and fractional administration into the abdominal cavity in the postoperative period.

Thus, using the LC + BP method for sanitation of the abdominal cavity and postoperative wound, it made it possible to: reduce the frequency of development of postoperative purulent-inflammatory complications from 7.9% to 2.4% ($p = 0.037$) in relation to patients with the comparison group (LC).

Conclusions. The use of the intraoperative reassignment method in the complex treatment of the abdominal cavity adapted bacteriophages, the rehabilitation of the wound bacteriophages through which the gall bladder is extracted, their fractional administration into the abdominal cavity in the postoperative period leads to a rapid relief of the inflammatory reaction, which helps to reduce the amount of postoperative purulent intra-abdominal and wounds complication.

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