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Editor

Komarytskyy M.L.

Ph.D. in Economics, Associate Professor

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e-mail: berlin@sci-conf.com.ua

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MICROBIAL STATUS IN THE EARLY POSTOPERATIVE PERIOD AS A PUBLIC HEALTH FACTOR

Nesterenko Valentyna Gennadiivna,

D.Med.Sc., Associate Professor of the Department of Public Health
and Healthcare Management

Lebid Petro Borisovich,

Candidate of Medical Sciences, Associate Professor
of the Department of Surgery №. 1

Krasnikova Larysa Volodymyrivna,

Assistant of the Department of Microbiology, Virology
and Immunology named after Professor D. P. Grinyev

Pomohaibo Kateryna Georgiivna,

Candidate of Medical Sciences, Associate Professor of the Department
of Public Health and Healthcare Management

Ishchenko Tetyana Borisivna,

Candidate of Medical Sciences, Professor
of the Department of Public Health
and Healthcare Management

Kharkiv National Medical University

Kharkiv, Ukraine

Introduction. Surgical infection occupies one of the leading places in modern clinical practice and remains a significant cause of postoperative morbidity and mortality. The frequency of wound infectious complications in various branches of surgery is 14–20%, while up to 40% of deaths after surgical interventions are associated with the development of purulent-septic complications. In general surgical practice, the leading place in the structure of purulent-septic processes is occupied by intra-abdominal infections (IAI).

From a clinical point of view, uncomplicated and complicated IAI are distinguished. In uncomplicated forms, the inflammatory process is limited to the boundaries of one organ without involving the peritoneum, which allows limiting oneself to surgical intervention or short-term antibiotic prophylaxis in the perioperative period (up to 24 hours). In a number of cases, in particular in acute diverticulitis or certain forms of acute appendicitis, conservative treatment is

possible. Complicated IAI is characterized by the spread of the inflammatory process beyond the boundaries of one organ with the development of limited or diffuse peritonitis and occupies one of the leading places among the causes of lethal sepsis in intensive care units. In such cases, a combination of surgical intervention and adequate antibacterial therapy is necessary.

Intra-abdominal infections are divided into community-acquired and hospital-acquired. The latter are characterized by a more severe course and a worse prognosis, which is due to the more severe initial condition of patients and a high probability of infection with multi-resistant hospital flora. The choice of antibacterial therapy is based on the stratification of patients according to risk level. The high-risk group includes patients with a severe clinical condition (more than 15 points on the APACHE II scale), advanced age, comorbidity, immunosuppression, malignant neoplasms or infections associated with the provision of medical care. In such patients, the isolated flora is often represented by multi-resistant pathogens, in particular MRSA, *Enterococcus* spp., *Pseudomonas aeruginosa*, *Enterobacteriaceae*, producers of extended-spectrum β -lactamases and fungi of the genus *Candida*, which requires the use of broad-spectrum antibacterial drugs. Low-risk patients have a predictable microbial spectrum with known susceptibility, so the use of overly broad antibiotic regimens in them is inappropriate.

Objective. To assess the microbial status of operated patients in the early postoperative period and to substantiate approaches to optimizing antibacterial therapy taking into account microbiological factors.

Materials and methods. Microbiological studies were analyzed in 56 patients who underwent surgical interventions for acute and chronic abdominal surgical pathology. The qualitative and quantitative composition of the microflora of postoperative wounds was determined, pathogens were identified and their sensitivity to antibacterial drugs was assessed.

Results and discussion. According to the results of the study, 64% of patients showed a predominance of gram-negative microflora with a microbial load of $\geq 10^6$ CFU, 23% – gram-positive flora with a concentration of $\geq 10^7$ CFU, 13% –

polymicrobial associations with the simultaneous presence of gram-positive and gram-negative microorganisms in clinically significant quantities. All patients received initial empirical broad-spectrum antibacterial therapy from the first day after surgery, since the results of bacteriological studies were available only on the 5th–6th day.

Some patients had clinical manifestations of intoxication syndrome, slowed reparative processes in the area of the surgical wound, and prolonged hospitalization, which necessitated the correction of treatment tactics. Prolonged use of antibacterial drugs (more than 12–15 days) was associated with the development of candidiasis, confirmed by repeated microbiological studies, and required the appointment of antifungal therapy.

From the perspective of microbiology, the postoperative wound is considered as a dynamic ecosystem, the formation of which is determined by the interaction of the patient's endogenous microflora, exogenous hospital contamination and the immunobiological state of the macroorganism. The leading role in postoperative infections is played by gram-negative bacteria of the Enterobacteriaceae family, in particular *Escherichia coli*, as well as *Staphylococcus aureus*, *Enterococcus* spp., *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* and *Acinetobacter baumannii*. A significant part of these pathogens is capable of forming biofilms and is characterized by a high level of antibiotic resistance.

Conclusions. The microbial state of postoperative wounds in thoracoabdominal surgery is a complex multicomponent process that significantly affects the course of the postoperative period and the effectiveness of treatment. The dominance of gram-negative flora, the spread of polymicrobial associations and multiresistant strains justify the need for early microbiological monitoring and an individualized approach to antibacterial therapy. A thorough microbiological study of the condition of patients before and after surgical interventions is a key condition for the prevention of postoperative infections, reducing the duration of hospitalization and improving the quality of life of patients.