RESULTS OF ADVANCED IMMUNOLOGICAL STUDIES IN COMPREHENSIVE SURGICAL TREATMENT OF BRONCHIECTASIS

Jasur Safarovich Hikmatov[1], Bakhtiyor Zarifovich Khamdamov[2], Karim Umarovich Gaziev[3], Jamshed Karimovich Ismatov[4]–Aziz Toshpulatovich Dekhqonov[5]

[1]ORCID0000-0002-2793-8627,e-mail:dr.hikmatovjs@gmail.com
[2]0000-0003-3569-6688,e-mail: dr.hamdamov@mail.ru
[3]ORCID0000-0003-0387-5892,e-mail: gazievku1970@gmail.com
[4]ORCID0000-0002-5820-7018,e-mail: dr.ismatovjk@gmail.com
[5]ORCID0000-0002-2793-8627,e-mail: dehqonovaziz5555@gmail.com
Bukhara State Medical Institute, Bukhara, Uzbekistan
Phone: +998914148886, e - mail : dr.hikmatovjs@gmail.com

The prevalence of bronchiectasis (BE) is not clearly defined in the literature. Weiker et al. reported that 340,000 to 522,000 adults in the United States were treated for bronchiectasis, and 70,000 adults were newly diagnosed with bronchiectasis in 2013 [6]. Another study shows that there were more than two million adult patients with bronchiectasis worldwide in 2012, and this number is expected to exceed three million by 2020 [2, 4].

Since bronchiectasis is characterized by inflammation of the lungs, anti-inflammatory drugs may theoretically be useful. However, a systematic review of the effectiveness of nonsteroidal anti-inflammatory drugs and corticosteroids in the treatment of bronchiectasis showed no clear benefit [1, 5].

From an immunological point of view, bronchiectasis is of great interest because it allows us to understand the mechanisms of immunodeficiency and the subsequent persistent inflammatory response to bacterial infection. It also provides an opportunity to manipulate the immune response to improve patient outcomes. It should be noted that there are many different factors that can contribute to the development of bronchiectasis (after infections , immunodeficiency , dysfunction of the mucous membrane, systemic inflammatory diseases, airway obstruction), and their pathogenesis is not fully understood [3] .

Purpose of the study: Improving clinical outcomes of the postoperative period using methods of correcting the immune status in the complex surgical treatment of bronchiectasis

Materials and methods: The study was conducted in 2019-2023 at the Bukhara Regional Multidisciplinary Medical Center and the Republican Specialized Scientific and Practical Medical Center of Surgery named after academician V. Vakhidov. 118 patients with bronchiectasis (BE) were examined. Of these, 47 patients were male (39.8%) and 71 patients were female (60.2%). The average age was 38.2±2.2 years.

The study included 52 patients in the main group and 66 patients in the comparison group. All patients received standard treatment, including antibiotics (depending on microbial sensitivity) and bronchodilators (inhalations of ipratropium bromide + fenoterol at a dose of 500 mcg through a nebulizer 3-4 times a day). Sanation fibrobronchoscopy was also performed for local therapy. The main group (52 patients) simultaneously received immunotherapy. Sanation fibrobronchoscopy procedures were performed at intervals of 3-4 days; The course of treatment lasted from 3 to 6 sessions depending on the nature and size of bronchial obstruction.

In the course of the study, we used the drug Likopid® for immunotherapy in patients of the main group. It contains glucosaminylmuramyl dipeptide (GMDP). It is available in tablet form. The drug is used in the complex treatment of diseases accompanied by cases of secondary immunodeficiency in adults: acute and chronic purulent-inflammatory diseases of the skin and soft tissues, including purulent-septic complications after surgical interventions. The drug is used in the morning half an hour before meals.

To determine the concentration of cytokines, sputum was taken from patients, and the studies were carried out using ELISA. In this case, the concentrations of interleukin-4 (IL-4) and interleukin-8 (IL-8) were determined using test systems. To determine humoral immunity, the concentration of

immunoglobulins IgA, IgM, IgG in the patient's sputum was determined using ELISA. In this case, test kits were used.

The results of the study were entered into the electronic matrix of the MS Excel-XP program. Statistical methods include the calculation of mean values (M) and their variation characteristics (standard error - SE, standard deviation - SD). Based on the principles of evidence, the reliability of all calculated statistical data ranged from $p<0.050$ to $p<0.001$. All statistics below $p>0.050$ were considered unreliable.

Results of the study: During the study, the concentration of cytokines that cause inflammation and counteract it is determined in the patient's sputum, the course of the inflammatory process in the body changes in accordance with the outcome of the disease, if the concentration of one of them exceeds the concentration of the other, this result indicates that the inflammatory process is intense. The fact that during our study, the cytokine IL-8, which determines the immunological status, quantitatively exceeds the anti-inflammatory IL-4, indicates the obvious development of this pathological condition.In other words, taking into account the level of inflammation, IL-4 and IL-8, which determine the immunological status, were recommended as additional diagnostic and prognostic immunological criteria.

Determination of the concentration of primary immunoglobulins (I gM, IgG, IgA, I gE) in the sputum of patients with bronchiectasis showed that in patients in the main and comparative groups the directions of their shift and tendency to multiply were almost the same. While the amount of IgA increased by 1.25 and 1.02 times ($p<0.05$) compared with the indicators of the control group in both groups, the concentration of I gMincreased by 1.15 times ($p<0.05$) and 1.05 times ($p>0.05$), respectively, while the same IgG indicators significantly increased by 2.12 and 2.14 times ($p<0.005$). Despite the pathogenetic significance of both immunoglobulins for the studied nasal unit, we admit that they are diagnostic and are not of great importance for determining the course of the disease and the prospects for its termination.

Patients with the underlying disease were characterized by significantly higher levels of anti-inflammatory cytokines (IL-4) than those in the control group. The intergroup gap in IL-4 was 1.98 and 2.05 times, respectively. For the first time among all the indicators, differences in cytokine parameters were found between patient groups (the main and withdrawal groups) ($p<0.05$, $p<0.005$). This is recommended as a new look at the pathogenesis of the disease, the role of the immune system in its formation and development. Both cytokines (IL-4 and IL-8) were recommended as additional prognostic criteria for practical healthcare in determining the future and termination of bronchiectasis in patients.

The obtained results showed that IL-4 and IL-8 were within the generally accepted norm or reference values in patients in the observation group and showed a result close to the practical one, even after treatment - 11.12±0.71 ng/ml and 46.31±1.59 ng/ml, respectively, for the studied parameters.

Determination of acute immunoglobulin (IgM, IgG, IgA, IgE) concentration in sputum of patients with bronchiectasis and comparison showed that the direction of change and the tendency of increase in sputum of patients with bronchiectasis are almost different. The amount of IgA increased by 1.25 and 1.02 times ($p < 0.05$) compared with the number of patient folds in both sexes, and the concentration of IgM increased by 1.15 times ($p < 0.05$) and 1.05 times ($p > 0.05$) increased, papameptaps IgG increased to 2.12 and 2.14 cards at a reliable level ($p < 0.005$).

During the study, the concentration of IgE in the patient's sputum, in contrast to IgA, I gMand Ig G , changed so much that it attracted attention. Unlike other immunoglobulins, their amount differed not only from the control group, but also among comparable groups.

In the main and comparative groups, it was noted that this indicator increased even more - 167.58±6.67 ng/ml ($p<0.005$ by 6.85 times). A significant increase in the IgE content (by 6.33 and 6.85 times) in the sputum of patients with bronchiectasis indicated an increased prevalence of the disease in the body.

In the study, complex surgical treatment of bronchiectasis, including sanative fibrobronchoscopy and immunotherapy, led to a change in the nature of separation in the bronchial tree in patients of the main group. In this group, the number of patients with mucopurulent discharge decreased by 35.9%, the number of patients with mucopurulent discharge increased by 1.9%, and in 34.1% of patients, discharge from the bronchial tree completely disappeared.

Conclusion: The use of immunotherapy in combination with traditional treatment in the complex surgical treatment of patients with bronchiectasis has achieved high efficiency and is considered pathogenetically

justified and highly effective in the treatment and prevention of the disease, so it has become possible to recommend it for widespread use in clinical practice.

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