



Advanced Methods of Treatment during Lung Abscess

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Abstract: The article analyzes the effectiveness of treatment of patients with lung abscesses using endoscopic drainage methods and the complex use of anti-inflammatory and liposomal drugs. For instrumental monitoring of the course of the pathological process and evaluation of the effectiveness of treatment, an ultrasound method is selected. Laboratory control was carried out by studying the level of indicators of endogenous intoxication. The results of ultrasound and laboratory observation of two groups of patients with different treatment methods are compared. The obtained data demonstrate probably a higher efficiency of the proposed method of endoscopic drainage of the cavity of a chronic abscess in combination with systemic and local use of anti-inflammatory and liposomal drugs and their advantage over traditional treatment regimens.

Keywords: lung abscess, endoscopic drainage, sonographic observation, sanation fibro-bronchoscopy, liposomal preparations.

Introduction. Lung abscess (AL) belongs to the group of purulent-destructive lesions of this organ and is initially manifested by the occurrence of necrosis of the pulmonary parenchyma. Further, depending on the resistance of the patient's body, the type of microbial flora and the ratio of alterative-proliferative processes, either sequestration and delineation of necrotic areas occurs, or progressive purulent-putrefactive melting of adjacent tissues and developing acute lung suppuration [1, 2]. The pathological process in the lungs is characterized by dynamism and one form of the course of the disease can turn into another, and with inadequate treatment in the acute period, chronization of the process develops [3].

Clinical picture: the breakthrough of pus in the bronchi is characterized by: high body temperature, chills, massive sweating, dry cough with chest pain on the affected side, complicated breathing or shortness of breath due to the inability to inhale deeply or early respiratory failure. With percussion of the lungs, there is an intense reduction of sound over the lesion, auscultation – breathing is weakened by a hard shade, sometimes bronchial. Objectively: pallor of the skin, sometimes cyanotic blush on the face, more pronounced on the side of the lesion. The patient occupies a forced position – on the "sick" side. The pulse communicates, may be arrhythmic. Blood pressure tends to decrease, with an extremely severe course, the development of bacteremic shock with a sharp drop in blood pressure is possible. The heart tones are muted. After a breakthrough in the bronchi: a coughing attack with the release of a large amount of sputum (100-500 ml) – expectoration of sputum with a "full mouth", purulent, often confused. With good drainage of the abscess, well-being improves, body temperature decreases, with percussion of the lungs, the sound is shortened over the lesion, less often – a tympanic tinge due to the presence of air in the cavity, auscultative – small-bubbly wheezing; within 6-8 weeks, the symptoms of the abscess disappear. With poor drainage, body temperature remains high, chills, sweats, cough with poor separation of confused sputum, shortness of breath, symptoms of intoxication, decreased appetite, thickening of the terminal flanks in the form of "drumsticks" and nails in the form of "watch glass".

In recent years, the number of open surgical interventions for chronic forms of AL has decreased, but the proportion of patients with concomitant pathology of the respiratory system (DS) in combination

with AL has increased. Despite the introduction of new treatment methods into clinical practice, adequate drainage of chronic lung abscesses has been and remains one of the main conditions for clinical recovery of the patient or for optimal preoperative preparation [1; 5;]. Endoscopic drainage methods are the most physiological and least invasive [2; 6]. The advantages of endoscopic drainage are not only the possibility of performing the procedure under local anesthesia with the preservation of the cough reflex, but also the possibility of performing further sanitation of the destruction cavity with the introduction of various medications into it [3]. To carry out the drainage procedure, the doctor must have complete information about the localization, size, structure of the pathological focus, the condition of the surrounding tissues. In this sense, we recommend rationally widespread use of the ultrasound method along with traditional radiological methods [4].

Goal. Improving the results of treatment of patients with AL by analyzing the features of the course and choosing a treatment method.

Materials and methods. 98 patients with chronic lung abscesses were examined and treated on the basis of the Clinical Diagnostic Center of BucHMI. All patients were divided into 2 groups. The first group (comparison) consisted of 48 patients who, in addition to conservative treatment, which included anti-inflammatory, antibacterial and detoxification therapy, traditional approaches to endobronchial sanitation of the focus of purulent inflammatory process were carried out. The second group (the main one) consisted of 50 patients who underwent endoscopic drainage of the abscess according to their own technique under visual control using radiopaque catheters with subsequent sanitation of the destruction cavity. We divided all the patients who were on treatment into three groups, depending on the course of the process. According to our data, an independent lung abscess (without concomitant pathology of DS) was observed in 48% of cases, lung abscess in combination with endobronchitis (EB) on the affected side in 12% of cases, lung abscess in combination with EB and chronic obstructive pulmonary disease (COPD) on the affected side in 40% of cases.

Patients of the main group, together with anti-inflammatory drugs, were systematically prescribed liposomal drug "Lipin" up to 2 times a day intravenously drip at a dose of 10 mg / kg of body weight, locally (endobronchially and for the rehabilitation of the abscess cavity), a mixture of anti-inflammatory drugs (hydrocortisone, gatifloxacin) and "Lipin" was intended. In patients of the comparison group, traditional methods and measures occupied a significant place in the treatment of chronic lung abscess. To analyze the laboratory effectiveness of treatment, we studied the indicators of endogenous intoxication and lipid peroxidation (POL).

One of the most important laboratory indicators of these processes is the level of products such as medium-weight molecules (MSM), low-sodium dialdehyde (MDA), diene conjugates (DC), superoxide dismutase (SOD). The leukocyte intoxication index (LEI) was also studied. The comparison was carried out using the Student's criterion. In order to find statistically reliable data in patients of the main group and the comparison group, we used the initial (at the time of hospitalization) and intermediate (on the 10th day of treatment) values of the above parameters. Bronchoscopic examinations were performed under local anesthesia. After the evacuation of the purulent discharge and the determination of the draining bronchus, we performed catheterization of the mouth of the draining bronchus or the cavity of a chronic abscess with a PVC catheter under X-ray control.

The drainage efficiency was monitored using the ultrasound method. The ultrasonic criteria for the effectiveness of treatment were considered to be a decrease in the size of the cavity (positive ultrasound dynamics), the appearance of signs of cavity obliteration. The chest examination using ultrasound was performed by a Toshiba 400 device without preliminary preparation of the patient for the study with a frequency of 1 time in 3 days. 3 types of sensors were used (convexic, sector-mechanical and linear). The studies were conducted at frequencies from 2.5 to 5.0 MHz.

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