



# CLINICAL AND LABORATORY RESULTS OF PATIENTS WITH LUNG ABSCESS ON THE BACKGROUND OF CONSERVATIVE TREATMENT

**B.B. Safoev, H.K. Turdiev**  
Bukhara State Medical Institute

Article history:	Abstract:
<p><b>Received:</b> 6<sup>th</sup> September 2022</p> <p><b>Accepted:</b> 6<sup>th</sup> October 2022</p> <p><b>Published:</b> 10<sup>th</sup> November 2022</p>	<p><b>Resume</b></p> <p>Over the past 10-15 years, the problem of suppurative lung diseases has rarely been discussed in foreign literature, but remains as relevant for our country. With widespread destruction of the lungs caused by the association of highly virulent, polyresistant microorganisms, the results of treatment remain unsatisfactory to date and high mortality remains: with acute abscess it is 2.5-4%, limited gangrene (gangrenous abscess) - 8-10%, common - 45-50%.</p> <p><b>The purpose of the study:</b> to study the features of clinical and laboratory parameters in lung abscess.</p> <p>The data of examination and treatment of 56 patients with lung abscess of various etiologies who were treated in the purulent surgical department of the clinical base of the Bukhara State Institute in 2012-2021 were analyzed.</p>

**Keywords:** Lung abscess, suppurative diseases of the lungs and pleura.

## TOPICALITY:

To date, there has been no tendency to reduce the number of acute lung abscesses, but on the contrary, many authors note an increase in cases of severe and complicated course of the disease. The most commonly described are clinical observations and the difficulties of differential diagnosis with other pulmonary diseases. The proportion of lung abscesses complicated by pyopneumothorax, bleeding, sepsis, has increased in recent years from 15.8% to 43.6%..

In assessing the nature of the nonspecific destructive process in the lungs, we adhere to the point of view of V.I. Struchkov [2], I.S. Kolesnikov et al. [3]. **Lung abscess refers** to purulent or putrefactive decay of necrotic areas of lung tissue, more often within a segment, with the presence of one or more destruction cavities filled with pus and surrounded by perifocal infiltration. The need for further searches for new approaches to the 2nd treatment of acute abscesses and lung gangrene is dictated by unsatisfactory results, relatively high mortality in surgical treatment.

The purpose of the study: to study the peculiarity of clinical and laboratory indicators for lung abscess.

## MATERIAL AND METHODS

The data of examination and treatment of 56 patients with lung abscess of various etiologies who were treated in the purulent surgical department of the clinical base of the Bukhara State Institute in 2012-2021 were analyzed.

Of the examined patients, 39 (69.6%) patients were admitted to the clinic with an acute form of a lung abscess, 17 (30.3%) patients were admitted with a chronic lung abscess

**Table 1 Resource requirements by component**  
**Location of the purulent focus of patients with lung abscess.**

Etiological factor	Location	Control	
		Abs	%
Right-sided localization of purulent focus	in the upper lobe	10	17,8
	in the lower lobe	13	23,2
	in the middle share	9	16,0
Left-sided localization of purulent focus	in the upper lobe	7	12,5
	in the lower lobe	17	30,3
	in the middle share	0	0
Altogether		56	100,0

Of the 56 patients of group I B, 32 (57.9%) patients had right-sided localization of the purulent focus, 24 (42.1%) patients had a purulent focus of the left lung (Table. 1).

Objectively, they noted: odysheka, cyanosis, tachycardia and weakness, in 35% of cases of patients forced to sex about the woman, and stable in the juice of the body temperature.

All patients were distributed by sex and age according to the classification of age groups adopted at the regional seminar of the World Health Organization in Kiev in 1963. Of the 31 (55.3%) men and 24 (46.7%) women aged 17 to 76 years (average age was 51.62.4 years). ±

**RESULTS AND DISCUSSIONS**

Diagnosis of the disease began with the collection of patient complaints, the degree of their severity, anamnesis, duration of the disease, analysis of the results of a clinical and objective examination of the patient. During the collection of anamnesis, the etiological factors of the development of the disease (preceding the disease, hypothermia, decreased reactivity of the body), the nature and duration of the complaints (cough, purulent sputum, hemoptysis, shortness of breath, chest pain, increase in general body temperature), concomitant and background pathology, symptoms of intoxication, respiratory failure, sepsis were determined.

All examined patients on the day of admission on an emergency basis and conservative empirical antibiotic therapy followed by a change of antibiotics, taking into account the results of sowing purulent contents, taking into account the sensitivity of microflora. All patients were measured body temperature, respiratory rate, an objective study of the lung (auscultation, percussion), pulmonary spirometry, pulse oximetry, X-ray examination and, if necessary, chest MSCT. According to the indications, sanctioned bronchoscopy was performed and nasotracheobronchial drainage of the purulent focus of the lungs was performed according to the indications.

Bronchoscopic examination was performed on the KARL SHTORS apparatus (Germany, 2006) using a flexible bronchoscope.

The position of the patient and the method of anesthesia and was carried out as described above. Gibkandy bronchoscope with a difference of 5.2 mm wire and li to the trachee through the nose, larynx, vocal ligaments under and zual control em. The end of the bronchoscope is directed to the lungs to the main bronchus of the lung, in the course (if necessary and) sanitation of the lumen a bronchus was carried out. The bronchoscope was extended to the detection of areas and bronchial svandshcha. Through the spec and al lumen for the bronchoscope conductor a, conducted and elastic catheter measuring 16 mm, the cone c of which under strict and m vand zual nym kan trolem was carried out into the cavity of the abscess, and with caution in the Elastic nycateter (microdrainage) with pomos chy leukoplastyr I was fixed on the skin of the upper lip and nose.

The effectiveness of the used and proposed clinical methods of treating suppurative lung diseases was assessed by the duration of bronchopulmonary symptoms, general symptoms of intoxication, the dynamics of X-ray radiological symptoms of the lungs and pleura, the size of the total bed day.

Clinical evaluation of the effectiveness of treatment of patients with suppurative lung diseases was accompanied by the study of laboratory indicators of signs of endogenous intoxication from peripheral blood (hemoglobin concentration, leukocytosis, ESR, LII, LI, MSM), the qualitative composition of the microflora of sputum. At the time of admission and in the process of treatment, the condition of patients was assessed by clinical signs, according to laboratory and instrumental methods of examination, as well as using X-ray methods of research.

The studied results of indicators of intoxication of the body of patients with purulent lung diseases revealed the following changes (Table 2).

**Table 2 Resource requirements by component  
Dynamics of intoxication rates of examined patients with purulent lung diseases (n = 56)**

Indicators	Observation time				
	Day of admission	Day 3	Day 7	Day 14	Day 20
t <sup>0</sup> тела	39,300,0±4	38,200,1±2***	37,900,17*±	37,200,13***±	36,700,09*±
L крови ×10 <sup>9</sup> /l	9,900,3±9	8,400,±47*	7,700,28±	7,200,31±	6,800,27±
MSM units	0,198±0,010	0,1680,00±7*	0,1590,012±	0,1320,007**±	0,1210,008±
LII units	2,600,07±	1,900,0±8***	1,900,05±	1,600,04**±	1,400,05**±
ESR mm/h	46,701,64±	40,4±1,52*	38,101,11**±	29,3±1,07***	18,600,72***±

Примечание: \* - достоверность различия относительно данных предыдущих суток значимы (\* - P<0.05, \*\* - P<0.01, \*\*\* - P<0.001).

As can be seen from Table 2, on the first day of treatment, the body temperature of patients averaged  $39.30 \pm 0.04$  °C. The content of leukocytes of blood was equal to an average of  $9.90 \times 10^9 / L$ . The volume of average molecules averaged  $0.1980 \pm 0.010$  units.

On the third day of treatment, there was a slight decrease in body temperature from  $39.30 \pm 0.04$ °C to  $38.20 \pm 0.12$ °C, the number of blood leukocytes decreased to an average of  $8,400 \times 10^9 / L$ . The volume of average molecules averaged  $0.168 \pm 0.007$  units.

By the seventh day of treatment, patients of the comparison group with purulent lung diseases retained a slight subfebrile condition ( $37,900,17$  C). At the same time, for all indicators of intoxication of the body: L, MSM, LII and ESR of blood, their further decrease was noted, that is, there was a tendency to normalize -  $7,700,28 \times 10^9$ ;  $0,1590,012$ ;  $1,900,05$ ;  $38,101,11$ , respectively. By the fourteenth day of treatment, these figures, although they had a tendency to further decrease, but remained above normal.

With further treatment and observation by the twentieth day, all analyzed indicators of intoxication, except for blood ESR, were within normal limits.

Studies of SpO2 indicators of the examined patients revealed the following: on the day of admission, SpO2 indicators were significantly less than normal -  $93.80\% \pm 0.2$ . In the process of treatment, SpO2 indicators tended to normalize at a faster pace than in the I A subgroup (Table 3)

**Table 3 Resource requirements by component  
Dynamics of pulse oximetry indicators of examined patients with lung abscess**

Index	Day				
	Day of admission	3 overnights	7 overnights	14 overnights	20 overnights
SpO2 %	$93,80 \pm 0,22$	$93,90 \pm 0,17$	$94,50 \pm 0,44$	$95,0 \pm 0,39^{***}$	$98,10 \pm 1,11^*$

Примечание: \* - достоверность различия относительно данных предыдущих суток значимы (\* -  $P < 0.05$ , \*\* -  $P < 0.01$ , \*\*\* -  $P < 0.001$ ).

By the third day of treatment, a dynamic increase in SpO2 indicators in patients was marked by unreliable positive dynamics. In the process of treatment on the 7th-10th and 14th day, there was a significant positive trend, SpO2 indicators reached  $95.0\% \pm 0.39$ , by 20 days to  $98.1\% \pm 1.11$ .

The next of the characteristic criteria for assessing the purulent process in the lungs was to determine the level of microbial contamination, to identify the species composition of the microflora. The identified species composition of microflora sown from the sputum of patients.

In most cases, of the 56 patients, 29 (51.7%) were seeded with pathogenic staphylococci (*Staphylococcus aureus*), of which 13 (44.8%) in the form of monoculture, and 16 (55.1%) in associations. In 14 (48.2%) observations, *Pneumococcus* was sown, in 4 (13.7%) observations *E. coli* was sown. The next most detectable was proteus - 2 (6.8%) observations.

The dynamics of studying the size of the cavities of the purulent focus of the lung in the analysis of control X-ray images and MSCT of the lung in patients of the I B subgroup are given in Table No. 4.

**Table 4.  
Dynamics of reducing the size of the abscess cavities in the examined patients.**

Index	Day				
	Day of admission	3 overnights	7 overnights	14 overnights	20 overnights
Cavity Dimensions(cm)	$6,80 \pm 0,09$	$5,90 \pm 0,25^*$	$5,20 \pm 0,26$	$4,50 \pm 0,18^{***}$	$3,10 \pm 0,12^{***}$
%	100,00	86,77	76,48	66,18	45,60

Примечание: \* - достоверность различия относительно данных предыдущих суток значимы (\* -  $P < 0.05$ , \*\* -  $P < 0.01$ , \*\*\* -  $P < 0.001$ ).

In dynamics, throughout the entire observation period, the size of the cavity of the purulent focus systematically decreased. By the 18-20th days of treatment, the size of the cavities was reduced to  $3.10 \pm 0.12$  cm, that is, by 45.60% of the original size. See Table 4. The average duration of inpatient treatment of the examined patients was  $20 \pm 2.3$  bed-days.

## FINDINGS

1. When assessing the general condition of patients with a lung abscess, the indicators of intoxication are important.
2. All indicators of intoxication with lung abscess on traditional treatment are normalized 12-14 days.
3. With a lung abscess in our region, mainly *Staphylococcus aureus* dominates up to 51.7% of observation and they most cases show sensitivity to Cephaperazuna and Sulbactam in 59.9% of cases.

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