

# Efficiency Of Combined Therapy In Professional Morbidity With Pulmonary Pathology

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**Abstract.** Information is given on the effective action of biologically active food additives of local production in complex treatment with traditional therapy in the treatment of patients with occupational lung diseases. An improvement in external respiration function in patients with pneumoconiosis, in particular with silicosis, was noted.

**Key words:** occupational morbidity, silicosis, therapy

## 1. INTRODUCTION

Occupational risk management is the main system for ensuring sanitary and epidemiological welfare and preserving the health of the working population (1) in Uzbekistan. However, scientific works devoted to assessing the health risks of certain professional groups of mining workers are still insufficient, which complicates the development of priority measures to maintain and promote health, as well as social protection of workers in this industry. The results of our own socio-hygienic, medical and physiological studies, as well as the analysis of literature data showed that in the course of labor, workers (2) of mining metallurgy are exposed to the combined effects of harmful production factors (3). Risk factors, taking into account the profession, differ in the level, duration and nature of the impact, and due to the peculiarities of the employees of the mining industry. In this regard, the relevance of studying the state of health of the labor potential is of both theoretical and practical importance for the professional pathological service (4). The social significance of occupational respiratory pathology from dust exposure dictates the need to develop and optimize the system of medical rehabilitation of patients by including pathogenetically based health-improving complexes in treatment and prevention programs. The existing standards and treatment regimens are considered mainly for medicinal aspects, while the possibilities of biological methods for treating occupational diseases of dust etiology are currently insufficiently covered (5, 6, 7). The ISVt famous and often used methods of aerosol therapy are those that allow you to quickly and painlessly directly affect the target organ, without exerting a pronounced systemic effect on the entire patient's body (8, 9). Along with medicinal substances, non-medicinal preparations are also used. The safest and ISVt affordable non-drug treatments include biologically active additives (BAA).

## AIM OF THE STUDY

To analysis BAA effectiveness in the complex rehabilitation therapy of patients with silicosis. Materials and MethodsThe studies were conducted among 180 patients with occupational lung diseases who were treated at the clinic of the Research Institute of Sanitation, Hygiene and Occupational Diseases of the Ministry of Health of the Republic of Uzbekistan. In terms of age, the examined contingent of patients was distributed as follows (Table 2.1): 30–40 years (first period of adulthood) —27 patients; 41–50 years old (second period of adulthood) - 73 patients; 51–60 years old (elderly people) - 66 patients; 61–80 years old

(senile people) - 14 patients. The structure of occupational diseases in the examined group is presented as follows: silicosis I, silicosis II and III degree. For the study, patients were divided into the following subgroups: 1st group - silicosis of the I degree, 4th group - silicosis of the II degree, III degree receiving conventional treatment, the 2nd group is receiving complex treatment of biologically active additives "Xilobronx" (manufactured by STRONG PHARM LLC) and group 3 - "BronchoNorm" (produced by "SIRDARYO DORI-DARMON") with a diagnosis of silicosis of the 1st degree, as well as the 5th and 6th group also received biologically active additives for food "Chilobronch" and "BronchoNorm" with silicosis of the 2nd and 3rd degree. For comparison, control groups (60 people each) were identified in accordance with the age-seniority structure, i.e. patients with occupational dust diseases of the bronchopulmonary apparatus, who received traditional complex therapy. The study was conducted in a BAA complex of local production. Method of application: dietary supplement for food "Xilobronx" 1-2 plastic spoon 2-3 times a day before meals and BAA for food Herbal tea "Dori-Darmon (BronchoNorm)" inside (oral) in the form of infusion, which is taken orally (orally) 50 ml (1/4 cup) 4 times a day before meals for 10-15 days. At the same time, the clinic used traditional methods of medication and physiotherapy. The duration of treatment is 10-11 days. Estimation of the effectiveness of therapy was carried out taking into account the subjective state of patients, an in-depth clinical examination with a description of the clinical manifestations of the disease, evaluating the function of external respiration (FER). In order to diagnose and determine the leading mechanisms of FER disturbance in the examined individuals, bronchial patency was studied using "high-speed" indicators of forced expiratory volume (FEV) spirometry, as well as pneumotachographic flow indicators at the expiratory level of 25, 50 and 75% forced vital capacity of lung (FVCL) - instantaneous space velocity (ISV 25 %), ISV 50 % and ISV 75 %. Studies of the functions of external respiration were carried out on a BTL-08 Spiro device manufactured in the United Kingdom (2015) before and after a course of treatment. ResultsAn in-depth examination revealed a high percentage of lung diseases in the structure of all diseases (48.4%). Among the examined, silicosis was detected in 21.8% (356 of 1681 people). With silicosis, the main complaint was pronounced shortness of breath, which was determined in 87.22%. In patients with silicosis of the first degree, severe shortness of breath was determined in 34.44%, when with silicosis of the II, III degree - 46.67%.

In addition, one of the ISVt common complaints is cough, which was 46.34% and 53.66%. Abundant sputum production was detected in 70.0%, while in patients with degree I silicosis it was determined in 46.83% of cases, of which 53.03% had a viscous consistency and 40.0% was of the nature of sparse sputum. With silicosis of the II, III degree, these indicators were 53.17%; 46.97% and 60% respectively. The study showed that after a course of therapy in the main part of patients, an improvement in the general condition was noted. When assessing subjective symptoms, a statistical decrease in the severity of cough and shortness of breath was revealed. So, shortness of breath at the end of treatment expressed decreased by 24.3% of the total number of patients with this complaint (group 1 – 8.06 %, group 2 – 12.9 %, group 3 - 17.74%, group 4 - 2.38 %, group 5 – 5.95 % and group 6 – 7.14 %) (Fig. 1). Fig. 1 The dynamics of changes in shortness of breath during the course of therapy. During rehabilitation, cough completely disappeared in 24.39 % and decreased in 41.46 % of patients (group 1 - 5.26 % and 7.89 %, group 2 - 5.26 % and 13.16 %, group 3 - 13 , 16 % and 26.32 %, group 4 - 2.27 % each, group 5 - 4.55 % each and group 6 - 9.09 % and 22.73 %). Also, there was an increase in the productivity of sputum production up to 76.98 % (group 1 - 18.64 %, group 2 - 30.51 %, group 3 - 40.68 %, group 4 - 13.43 %, group 5 - 20, 89 % and group 6 - 31.34 %).

Indexes	VCL	FVCL	FEV1	ISV 75	ISV 50	ISV 25
Norm	More 84,3	More 77,2	More 81,6	More 90	More 85	More 72,4
Conditional Norm	84,3-74,2	77,2-62,6	81,6-69,8	90-85	85-75	
Contravention	Moderate	74,2-48,7	87-70			
	74-55	54,8-41,1	62,6-41,8	69,8-		
52,8						
Significant	48,7-40,2	41,1-27,4	41,8-33,3	69-50	54-35	
sharp	Less 40,2	Less 35,9	Less 50	Less 35	Less 27,4	
silicosis I	51,54±5,52	43,2±5,89	71,58±4,26			
	58,1±8,93	54,7±6,21	49,16±7,22			
silicosis II, III	41,94±5,89*	37,31±7,51*	53,71±6,33*			
	39,54±7,12	40,05±7,65*	28,09±6,86*			

Analysis of the results of the ventilation ability of the lungs showed that in patients with degree I, II, and III silicosis, the HPF indices were low before treatment and improvement after treatment (Table 1).

In the clinic, patients received medication, namely, treatment in which there was an improvement in VCL by 1.43, FVCL - 1.87, FEV1 - 1.24, ISV 75 - 2.3, ISV 50 - 2.14, ISV 25 - 1.42.

Table 1

Indicators of the function of external respiration (% , R) in case of silicosis

Note: p≤0,01 □□ Significant differences from Silicosis I

In a hospital, after a course of therapy, along with the traditional method of a complex of medical and physiotherapeutic treatment, treatment was carried out using BAA. Most patients showed improvement in general condition. Along with the improvement of clinical indicators, there was a positive dynamics of functional indicators when

using the treatment complex of traditional therapy + “Xilobronx” and traditional therapy + “BronchoNorm” (Table 2A and Table 2B). According to average statistics, a significant increase in VCL is from 51.48 to 54.55% and from 51.7 to 56.37%, FVCL - from 71.08 to 73.92% and from 71.14 to 74.77% with silicosis of I degree, and with silicosis of II, III degree, VCL - from 42.04 to 43.29% and from 41.53 to 44.78%, FVCL - from 53.88 to 56.05% and from 53.39 to 56.61%. An improvement in bronchial patency was also evidenced by an increase in ISV 75, 50, and 25. The average bronchial patency in the groups tended to increase, but among patients who additionally received biologically active additives BronchoNorm, there was a statistical increase in FEV1.

Table 2A

The dynamics of the FER indexes (% , R) during medical rehabilitation

	FVCL	FEV1	VCL		
	Until	After	Until	After	Until
Silicosis-1 traditional therapy	74,40±4,59	51,45±5,55	58,25±12,55	72,53±4,82	59,49±12,39
Silicosis-1 “Xilobronx”	58,17±5,8	54,5±6,61	61,27±5,48	71,08±4,52	73,92±3,97
Silicosis-1 “BronchoNorm”	74,77±2,79	51,7±5,46	57,87±8,45	71,14±3,43	62,01±7,03
Silicosis -2,3 traditional therapy	55,12±6,99	42,25±5,77	39,95±9,37	53,87±7,36	40,75±9,51
Silicosis -2,3 “Xilobronx”	39,41±6,73	43,29±3,97	53,88±6,01	56,05±5,64	42,04±3,49
Silicosis -2,3 “BronchoNorm”	56,61±5,43	41,53±8,42	39,25±5,28	53,39±5,62	42,46±5,7

Note: p≤0,01

Table 2B

The dynamics of the FER indexes (% , R) during medical rehabilitation

	ISV 75	ISV 50	ISV 25		
	Until	After	Until	After	Until
Silicosis-1 traditional therapy	45,67±7,85	55,06±6,09	49,44±8,46	43,37±7,48	51,58±7,9
Silicosis-1 “Xilobronx”	49,03±7,12	57,92±6,85	53,34±5,97	43,23±4,98	47,45±5,67
Silicosis-1 “BronchoNorm”	49,01±6,09	59,12±6,72	53,57±5,69	43±5,21	48,28±5,3
Silicosis -2,3 traditional therapy	39,63±7,98	40,57±9,44	28,9±8,71	37,59±7,99	29,91±7,96
Silicosis -2,3 “Xilobronx”	27,67±6,46	37,28±7,46	31,08±6,63	41,31±8,61	40,11±6,98
Silicosis -2,3 “BronchoNorm”	43,44±7,04				

Silicosis -2,3 "BronchoNorm"	37,06±7,07
41,92±6,29	27,69±5,42    32,07±5,34
39,48±6,54	43,82±6,27

Note:  $p \leq 0,01$

## CONCLUSIONS

1. The use of the health-improving complex has improved the positive dynamics in patients with the development of pulmonary dust pathology. The courses of therapy for patients have improved lung ventilation with the development of pneumoconiosis (silicosis).
2. The inclusion of biological active additives in the rehabilitation complex gave a great therapeutic effect in all the studied groups. The use of biological active additives in food "Xilobronx" increases the effectiveness of medical rehabilitation, but dietary supplement "BronchoNorm" had a more effective effect compared to traditional therapy and "Xilobronx" supplements are recommended for inclusion in the program of rehabilitation of patients with occupational diseases of the respiratory system, in particular with pneumoconiosis.
3. Employees of the risk group with occupational respiratory disease are recommended to use the biological active additives "Xilobronx" and "BronchoNorm" as health and preventive measures for the development of pulmonary pathology.

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