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APPROACH TO THE THERAPY OF CHRONIC OBSTRUCTIVE LUNG DISEASE

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ABSTRACT

A study of 63 patients with a diagnosis of COPD of the II-III degree was carried out. The main group I of 43 patients, along with the basic therapy, received insiron at a dose of 80 mg 2 times a day for 10 days. II control 20 patients received basic funds. In group I, the intensity of cough significantly decreased, the patency of the bronchi increased by 17.7%, and the indices of local protection moderately increased. In patients taking inspiron, there was a tendency to a decrease in the viscosity of sputum, an improvement in its discharge, and a decrease in the intensity of cough. Thanks to these positive shifts, the rate of reproduction of microflora in the bronchial mucosa decreases and the severity of adhesion and aggregation indicators of blood corpuscles decreases, and humoral immunity is enhanced.

KEYWORDS: *Chronic Obstructive Pulmonary Disease, Bronchitic, Emphysematous, Bronchial Secretions, Spirography, General And Local Immunity, Cytology, Morphology Of Mucous Membranes.*

INTRODUCTION

Chronic obstructive pulmonary disease (COPD) is a chronic and slowly progressive disease characterized by irreversible or partially reversible obstruction of the upper airways (10,12,13,16). The disease is characterized by progressive airflow restriction (14,16,17). In recent years, the problem of COPD has been increasing and acquiring more and more medical and social significance, worsens the quality of life and leads to an increase in disability and death of people (2, 15,17). The reasons for the exacerbation of COPD are air pollution from industrial waste, combustion products of various fuels, exhaust gases and household dust substances, and smoking and an infectious factor are of no less importance (3,5,7,13,17). The combination of smoking with bronchial hyperreactivity and hyperimmunoglobulinemia E accelerates the formation of COPD. Long-term smoking disrupts the drainage function of the mucociliary apparatus. Hypersecretion of mucus occurs under the influence of tobacco smoke and other harmful effects. This hypersecretion is combined with a change in the rheological properties of bronchial secretions, which become more viscous. Viscous sputum, tobacco smoke, industrial hazards, viral and bacterial toxins suppress the function of mucociliary cells and at the same time lead to dysfunction of the ciliated epithelium due to the reabsorption of excess mucins from the lumen of the bronchi (4,6,8).

Exacerbation of the disease occurs by inflammatory processes in the respiratory system, which impairs the patency of the bronchial tree and leads to an increase in all signs of the disease (12,13,15). According to the literature (6,7,12), about 55-60% of cases of exacerbation of COPD is an upper respiratory tract infection and about 40-45% of other causes. The leading link in the development of the disease is a violation of the drainage function of the mucociliary apparatus, the latter plays the leading role of the protective mechanism of the respiratory tract. As you know, the efficiency of bronchial cleansing depends on the rheological properties of bronchial secretions and the coordinated work of the ciliated apparatus, contraction of the smooth muscles of the bronchial walls (14).

The main symptoms of the disease are shortness of breath, cough, and sputum production. The accumulation of sputum disrupts patency in the bronchial systems, which initiates other symptoms. In COPD, along with pulmonary manifestations, extrapulmonary symptoms appear, such as a decrease in the mass of skeletal muscles, which leads to muscle dysfunction and leads to a restriction of ventilation. The latter lead to shortness of breath and fatigue. Dilution and secretion of sputum leads to an improvement in the course of the disease (16).

In the respiratory system, violations of the cell protection of the I-II line occur. So the first line includes the protective factors of the oral mucosa and palatine tonsils, the second - surfactant, alveolar macrophages and others (9). Recently, the effect of natural natural factors on the state of protection of the mucous membranes of the upper respiratory tract, which are the first barriers to the penetration of various infections, has been of particular interest (2, 3, 6, 8, 10, 11).

In this regard, when treating COPD, it is necessary to take into account the following principle, the elimination of factors that cause the development and progression of the disease. In the phase

of exacerbation of COPD, therapy should be aimed at eliminating the inflammatory process in the bronchi, improving bronchial patency, restoring the impaired general and local immunological reactivity, and further anti-relapse and supportive therapy is needed (1,5,8,9). Inspiron is a drug for thinning sputum and facilitating the drainage function of the bronchopulmonary systems, has an anti-inflammatory and antispasmodic effect on the smooth muscles of the bronchi.

Main part. The aim of the study was to compare the therapeutic efficacy and tolerability of the drug Inspirona in the complex therapy of COPD.

Materials and research methods. The study was carried out in the pulmonary department of the Bukhara regional multidisciplinary medical center. There were 63 patients under observation, including 34 men and 29 women with a diagnosis of COPD II-III degree, aged 42 - 71 years. In 28 patients, grade II was established, in the remaining 35 patients, grade III COPD. 34 patients had bronchitis, and the remaining 29 patients had emphysematous type of COPD. The studied patients were disturbed by cough, discharge of mucopurulent sputum and shortness of breath. All patients heard dry and moist wheezing in the lungs. Examination revealed diffuse cyanosis in patients, and when examining blood, they revealed compensatory erythrocytosis from 6 to 6.7 million and leukocytosis from 9.4 to 10.1 thousand in 1 mm³ of blood. Depending on the method of treatment, all patients were subdivided into two groups, representative in terms of gender indicators of patients, average duration of illness, type of COPD, and other characteristics. The first (experimental) group of 43 patients, along with basic therapy, received Inspiron at a dose of 80 mg 2 times a day, in the morning and in the evening before meals, for 10 days. Basic therapy included antibiotic therapy, anticholinergics, xanthines, antihistamines, expectorants and general tonic. The second (control) group of 20 patients received only basic therapy. General clinical analyzes were carried out, the main clinical symptoms of the disease were assessed on a three-point scale. Also the indicators of spirometry, data of the immunological research method were analyzed. In addition to clinical, functional studies, cytological studies (Nadzhimitdinov S.T. 2002) were carried out on preparations of prints taken from the mucous membrane of the palatine tonsils and nose (7). The study of the qualitative and morphofunctional characteristics of platelets was carried out according to the method of S.T. Nadzhimitdinov (2004). Endoscopy was performed using the apparatus "Olimpus" Japanese device, the state of the mucous membranes and the patency of the trachea and large bronchi were assessed.

RESULTS AND DISCUSSIONS

Analysis of the results of the studies showed that in patients who took the drug Inspiron on days 6-7 of the disease, coughing attacks significantly decreased by 1.7 points and sputum discharge improved about 2 times ($p < 0.05$). Although there were positive changes in terms of the intensity of cough, however, the drug Inspiron had a relatively weak effect on the course of dyspnea in patients with bronchitic type of COPD. There was a tendency towards a decrease in the dyspnea indicator, which was comparatively less, which was 1.4 points ($p < 0.05$). This effect was even weaker in patients with the emphysematous type of COPD. In the latter, after the treatment, although the coughing attack and sputum discharge significantly decreased by 1.2 and 1.3 points, respectively, when comparing the initial indicator ($p < 0.05$), however, shortness of breath continued to bother the patients, no significant changes were found ($p > 0.05$). During the indicated period of therapy in the studied patients, the severity of cyanosis decreased. Studies of

a general blood test in patients with bronchitic type of COPD showed the return of the number of erythrocytes and leukocytes to normal values.

In patients who took only basic therapy after the treatment, minor changes were observed. A decrease in the severity of a cough attack and an improvement in sputum discharge in patients with bronchitic type were observed on days 8-9 of treatment. Similar changes in patients with emphysematous type of COPD were observed relatively weaker. During the indicated period of treatment, although coughing attacks and the amount of sputum secreted changed in a positive direction, when comparing these indicators with the initial data, unreliable changes were revealed ($p > 0.05$). In patients receiving treatment in the control group, the intensity of dyspnea practically remained at the initial value. Approximately the same picture was observed in the dynamics of changes in cyanosis. The indices of compensatory erythrocytosis and leukocytosis remained almost at the same level. Analysis of these indicators of cough and sputum production and dyspnea significantly decreased in patients of the main group when compared with controls, the differences were 0.5, 0.6 and 0.4 points, respectively ($p < 0.05$).

Before treatment, the main parameters of FVD in all patients were significantly reduced in comparison with the norm (Table 1).

Respiratory function indices in the dynamics of treatment with Inspiron ($M \pm m, \%$) Table 1

Index %	I group (n=26)		II group (n=25)	
	Before treatment	After treatment	Before treatment	After treatment
FVC	62,2±2,6	75,3±3,2*	63,1±2,4	68,4±2,4
FEV 1,0	61,3±2,1	75,6±2,3*	63,1±2,5	67,2±2,6
PEF	63,1 ± 2,6	75,8 ± 3,5*	62,2 ± 2,2	66,1 ± 2,4
FEF 75	57,2 ± 2,3	74,9 ± 2,7*	59,3 ± 2,0	64,4 ± 2,0
FEF 50	60,2 ± 2,2	74,3 ± 3,2*	61,2 ± 2,2	65,3 ± 2,7
FEF 25	65,3 ± 3,4	71,2 ± 3,0	67,1 ± 2,4	70,2 ± 2,3

Note: * - ($p < 0.05$) compared to pre-treatment data.

Analysis of the spirometry data showed that before the treatment, the main parameters of the bronchial tree were significantly reduced, in patients of groups I and II FEV 1.0 - the forced expiratory flow rate was reduced by 39.7% and 36.9%, respectively, when comparing and to the proper values ... Also, the patency of the bronchi at a glimpse - FEF 75, medium - FEF 50 and a large level - FEF 25 were significantly reduced when compared to normal. After treatment with insiron, mainly in patients with bronchitic type of COPD, there was a significant increase in bronchial patency, an increase in FEV -75, FEV-50, FEF -25, respectively, amounted to 14.3%, 17.7%, 14.1% ($p < 0.05$). This indicates an improvement in patency at all levels of the bronchial tree, especially at the level of small bronchi. Improvement of bronchial patency occurs due to an improvement in rheological properties and sputum discharge, in connection with an improvement in the excretory function of the mucociliary apparatus, which leads to a decrease in bronchial obstruction with mucus and due to a reversible component of inflammation of the bronchial wall. It should be recognized that in the patients of the control group there was no significant change after treatment compared to the initial indicator, as evidenced by the relatively

low growth of FEV -1.0 FEV -75, FEV -50, FEF -25, which looked respectively: 4.1% , 5.1%, 4.1%, 3.1% ($p > 0.05$). The data obtained by the endoscopic method indicated damage to the mucous membranes of the trachea and large bronchi, which were characterized by hyperemia, edema and deformation of their walls, the lumen of the bronchus was filled with thick viscous secretion. After the treatment, regression of endoscopic signs of the inflammatory process was noted, mainly in groups I and II, respectively, 72% and 12% of patients, there was a decrease in the secretion of bronchial mucosa, the disappearance of hyperemia and edema of the mucous membranes and restoration of their patency.

Initially, on preparations of prints taken from the palatine tonsils and nasal mucosa in patients against a background of contamination, mainly by coccal flora (*Streptococcus pneumoniae* 22%, *Streptococcus piogenes* 33%, *Haemophilus influenzae* 5%), single lymphocytes were found, a large number of inactive segmented neutrophils without signs of phagocytic activity. After the treatment, according to the indicators of cytological examination of smears from the mucous membrane of the palatine tonsils, along with the leveling of clinical symptoms, a decrease in the dissemination of coccal microflora was noted in patients in groups I and II, respectively, in 74% and 11% of patients compared with the initial data. At the end of treatment, patients of group I were found to have the 3rd (8% and 16%) and 4th (88% and 48% of patients) stage of inflammation according to S.T. Nadzhmitdinov, which indicates the activation of the cellular defense reaction of the body. However, in patients of group II, significant changes in the colonization of coccal microflora were not revealed.

Analysis of the results of platelets before treatment showed that 60% of patients had initial signs of the process of adhesion and aggregation of platelets in the peripheral blood, their sizes were large and active. The initial data obtained indicated an increase in the process of peripheral blood coagulation. After the treatment in patients of group II, slight shifts in platelet counts were revealed, only in patients of group I significant positive shifts were noted, which indicated an increase in the process of disaggregation in 7 (47%) patients, characterized by a decrease in the process of adhesion and agglomeration of platelets to normal in peripheral blood. Platelets were located alone, became small, inactive, which indicated a decrease in the process of hypercoagulation and normalization of blood coagulation.

An increase in the viscosity of bronchial secretions is accompanied by changes in its quality, which leads to a decrease in nonspecific components of local immunity (interferon, lactoferrin and lysozyme and secretory IgA, which have antiviral, antimicrobial activity. All this leads to disruption of the mucociliary apparatus and the accumulation of mucus and its infection due to the multiplication of microbial flora. Thick and viscous bronchial mucus with a reduced bactericidal effect is a demanded breeding ground for microorganisms. Under certain conditions, these patients are activated respiratory infection (12).

In the course of treatment, it was revealed that the main group of patients examined showed a tendency to a decrease in the viscosity of sputum, an improvement in its discharge, and a decrease in the intensity of cough. It is clear that due to the indicated positive shifts, the rate of reproduction of microflora in the bronchial mucosa decreases and the severity of adhesion and aggregation indicators of blood corpuscles decreases, and humoral immunity is enhanced. Improvement of blood rheology leads to improved blood supply in the focus of inflammation, the influx of protective cells in the affected organs and regression of the inflammatory process.

CONCLUSION

Thus, on the basis of the studies carried out, it can be concluded that the following positive changes were observed in patients with COPD who took the drug Inspiron:

The rheological properties of sputum improved with a decrease in its viscosity and an increase in the amount of secretion secreted.

The function of external respiration was restored comparatively faster, the permeability of the air flow at the entire level of the bronchi improved.

Decreased contamination of the microflora of the mucous membranes of the upper respiratory tract.

The processes of platelet aggregation and normalization of blood coagulation decreased.

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