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Bronchial Asthma and Allergic Rhinitis

**Ikramova Shakhnoza
Abdurasulovna**

Bukhara State Medical Institute named after Abu Ali Ibn Sina
Assistant of the Department of Internal Medicine
+998914031755

ABSTRACT

138 patients aged 18 to 70 years were included in the study to study the course and level of control over the disease, indicators of quality of life (QOL) and cytokine profile in patients with bronchial asthma (BA) in combination with allergic rhinitis (AR). In the observed patients, drug (34.3% vs 12.1%) and food (34.3% vs 15.2%) allergies were significantly more common than in patients with isolated BA. The majority of patients (65.7%) had an uncontrolled course of BA. The negative effect of BA in combination with AR on the QoL of patients was shown. Thus, the revealed relationship between QOL parameters and the result of the AST test, as well as the level of cytokines in the blood serum (IFN- γ , IL-8) in the observed patients, allows us to consider these parameters as criteria for controlling the course of asthma

Keywords:

allergic rhinitis, bronchial asthma, level of control, quality of life, cytokines.

Introduction

Bronchial asthma (BA) occupies a leading position in the structure of respiratory diseases and is the most important problem in clinical medicine and pulmonology. Asthma is one of the most common chronic diseases in modern society: there are about 300 million asthma patients in the world [1].

A feature of the new century is the increase in the number of patients with comorbidities. First of all, this concerns BA and allergic rhinitis (AR) [2; 3]. According to epidemiological studies conducted in various countries of the world, the prevalence of BA is from 1 to 18%, and the prevalence of AR ranges from 10 to 25% [4].

Materials And Methods

A clinical examination was carried out in 138 patients with asthma who were treated in the department of pulmonology and

allergology and in a specialized consultative and diagnostic center.

Calculations and evaluation of the results were performed using Microsoft Excel 2007 and Statistica 6.0 StatSoft. Numerical values were processed by variation statistics methods. Significance of differences was assessed by Student's t test (t) and significance level (p). Correlation analysis was carried out using the Pearson correlation coefficient.

Results And Discussion

We assessed the level of control over asthma symptoms using the AST questionnaire. The majority (65.7%) of patients had an uncontrolled course of BA, 28.6% had good control, and only 5.7% of patients had completely controlled symptoms of the disease, which corresponds to the literature data [3], according to which complete control over BA was achieved in 5.0% and 3.0% of patients, respectively. Despite the large number of

complaints, the vast majority (81.0%) of the interviewed patients believed that their asthma was under control. The high incidence of patients underestimating their condition can be explained by the fact that patients and doctors have different requirements for the concept of "control of asthma".

To study the factors that determine the level of control over BA when combined with AR, all patients were divided into 2 groups. Group 1 consisted of 69 patients with uncontrolled asthma (ACT test score <20 points), Group 2 consisted of 36 patients with controlled asthma (ACT test score of 20 to 25 points). The mean age of patients with uncontrolled BA significantly ($p < 0.001$) exceeded the mean age in the group of patients with controlled BA (33.4 and 25.4 years, respectively); patients aged > 40 years were 36.2% and 5.6%, respectively. All patients of the 2nd group were working, in the 1st group the workers accounted for 92.8%, the level of their education was significantly lower ($p < 0.001$). Among the patients of the 1st group, patients with higher education were 75.4%, in the 2nd group - 97.2%.

In patients with an uncontrolled course of the disease, BA was significantly more often ($p < 0.001$) severe or moderate (89.9%; in the 2nd group - 44.4%), combined with moderate AR (59.4% and 25.0%, respectively), in 33.3% of cases there was a concomitant pathology (in the 2nd group - in 13.9% of cases). In patients with severe BA, not a single case of a controlled course of the disease was identified.

In the 1st group of patients, indicators of the function of external respiration: forced expiratory volume in 1 s, forced vital capacity of the lungs, maximum expiratory flow rate at the level of 75% FVC (MOS75) were within the normal range in 12 patients (17.4%), moderately reduced in 34 (49.3%), significantly reduced in 23 patients (33.3%). In the group of patients with controlled BA, these parameters of respiratory function were significantly more often ($p < 0.001$) within the normal range (77.8%), and only in 8 patients (22.2%) they were moderately reduced.

From the anamnesis, significant differences in the timing of the diagnosis of AD

were revealed. In the 1st group, this period was 4.5 ± 0.71 years, in the 2nd group - 2.3 ± 0.71 years, the differences are significant ($p < 0.01$). In the group with uncontrolled asthma, after the first symptoms of the disease appeared, 31.9% of patients did not go to the doctor and were treated independently for a long time. Among patients with controlled asthma, long-term self-medication was noted in 13.9% of cases, the differences were significant ($p < 0.05$). At the time of observation in the 1st group of patients, 56.5% of patients did not receive regular basic anti-inflammatory therapy. We assessed the quality of life of patients using the questionnaire of St. George's Hospital. It was found that in the observed patients, the QoL indicators were statistically significantly ($p < 0.001$) higher than the average values of the scales for healthy people (Fig. 1). In men and women, with almost the same (52.2 and 56.4 points) indicators on the "Symptoms" scale, a statistically significant ($p < 0.05$) excess of all unfavorable indicators on the remaining scales in women was revealed. Comparison of QoL indicators in 2 age groups (1st - < 40 years; 2nd - > 40 years) showed a significant decrease in QoL with age on all scales ($p < 0.001$).

Conclusion

According to the results of the correlation analysis, a direct relationship was found between the level of IFN- γ and the QoL index on the "Symptoms" scale ($r = 0.33$), as well as an inverse relationship between the level of IL-8 and the indicators of other scales. That is, the higher the score on the "Symptoms" scale, which corresponds to the lower QoL of patients, the higher the level of IFN- γ and the lower the level of IL-8 in the blood serum.

The set of studies that we used to assess the level of control over the symptoms of the disease, study the quality of life of patients and analyze the parameters of the cytokine profile of blood serum made it possible to obtain new data, the use of which will help improve the diagnosis of BA in combination with AR and optimize approaches to treatment of adult patients.

Based on the results of the study and a comprehensive statistical analysis, the following conclusions were drawn:

1. In patients with BA in combination with AR, drug and food allergies (34.3%), pollen sensitization (77.1%), and concomitant pathology of the upper respiratory tract were significantly more common than in patients with isolated asthma. (21.9%), as well as burdened heredity for AR (38.1%).

2. Most of the observed patients (65.7%) had an uncontrolled course of BA. A negative effect of BA in combination with AR on the QoL of patients was shown.

3. Among the factors that determine the level of control over BA and affect the quality of life of patients, there are untimely diagnosis of BA (in 31.9% of cases with uncontrolled and in 13.9% with controlled BA) and AR (in 81, 9% of cases), inadequate treatment (56.5% of patients with uncontrolled asthma did not receive regular basic anti-inflammatory therapy), asthma severity (in 89.9% of cases with uncontrolled and in 44.4% of cases with controlled asthma). was severe or moderate) and rhinitis associated with it (in 59.4% and 25.0% of cases, respectively, BA was combined with moderate AR), the presence of concomitant pathology (in 33.3% of cases with uncontrolled and in 13 9% of cases with controlled asthma), gender, age (patients aged > 40 years were 36.2% and 5.6%, respectively), educational status of patients (respectively, 75.4% and 97.2% of patients with high - education) and lifestyle (smoking, work).

4. The dependence of QOL parameters and the result of the AST test, as well as the level of IFN- γ and IL-8 in the blood serum in patients with BA in combination with AR was revealed, which allows us to consider these parameters as possible control criteria over the course of asthma.

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