QUALITY OF LIFE IN BRONCHIAL ASTHMA

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Abstract
The quality of life indicators were studied in 62 patients with moderate and severe bronchial asthma who were admitted to inpatient treatment due to an exacerbation of the disease. The survey was conducted using special AQLQ questionnaires and SGRQ on the 2nd-3rd day of the examination and after the initial treatment. A significant decrease in quality of life indicators was revealed in patients with bronchial asthma during the period of exacerbation of the disease. In patients with severe bronchial asthma, compared with patients with moderate bronchial asthma, more low values of quality of life. After the treatment, the quality of life indicators increased significantly, but remained lower than in patients with moderate bronchial asthma. At the end of hospitalization, there is an inverse correlation between the duration of the disease and the quality of life scales.
In addition to reducing the symptoms of the disease and the positive dynamics of lung function indicators, achieving remission of bronchial asthma is accompanied by a significant improvement in the quality of life of patients.

Keywords: bronchial asthma, quality of life.

Introduction
According to the European Community of Pulmonologists, the prevalence of bronchial asthma (BA) in Russia is 5-8% in the general population, with 20% of patients suffering from this disease in severe form. One of the criteria for evaluating the effectiveness of medical care to the population, which has become widespread in recent years, is the quality of life (QL). QL is an integral indicator reflecting the degree of adaptation of a person to the disease and the ability to perform habitual functions corresponding to his socio-economic position. The study of QOL gives an idea of the physical, psychological and social functioning of the patient and allows you to assess the impact of the disease on the patient's condition.

The aim of the study is to assess the dynamics of the quality of life of patients with exacerbation of bronchial asthma during inpatient treatment. Bronchial asthma leads to permanent disability, to a decrease in the quality of life, as well as mortality. According to statistics, there are about 130 million patients. The fear of an attack, which can manifest itself in bronchial asthma, does not allow you to do simple work, and the symptoms of the course lead to patient care for several days.

According to statistics, the birth rate of a child with bronchial asthma is 50% if

both parents are sick, but at the same time, characteristic symptoms may not manifest, the environment plays a big role. In childhood, Bronchial asthma is often confused with whooping cough and bronchopneumonia. Bronchial asthma is most common in Australia, New Zealand, the USA, Israel and Ireland. Bronchial asthma is based on bronchial obstruction of the bronchi, which is variable and hyperactive, as well as as a result of any inflammation, the bronchi become hyperactive in response to any allergic agent, an allergic reaction is caused by type 1, immediate inflammation, less often immunocomplex (type 3). According to

More than 260 thousand people die from bronchial asthma, according to the indicator, they are leading: The Russian Federation, Uzbekistan, South Korea

and Singapore. Bronchial asthma often develops in childhood, but can develop at any age (over 40 lei or late debut). Factors that contribute to the development of bronchial asthma are, genetic predisposition, the presence of an allergic reaction to household dust, to animal hair (of all animals, regardless), to plant pollen, fungi of a number of penicillins, pollutants, possibly also the presence of allergies to food (fish, egg white, nuts, citrus fruits. The inflammatory mediator includes: bradykinin, histamine, interleukins, chemokines, and inflammatory cells include: mast cells, eosinophils, neutrophils, T-lymphocytes. Bronchial asthma is one of the most progressive diseases of mankind.

MATERIALS AND METHODS

The study included 62 patients with asthma (50 women and 12 men) between the ages of 36 and 70. Of these, 40 patients with moderate asthma (MBA) and 22 with severe asthma (SBA). In the MBA group, 11 patients suffered from an allergic form of BA, 8 from mixed and 21 from non–allergic BA. In the SBA group, the allergic form of the disease was noted in one patient, mixed in two, non–allergic in 18. At the polyclinic stage, the majority of patients (83.6%) received basic therapy: 19 patients (39.3%) received inhalation glucocorticosteroids (RIG), 9 (14.8%) – combination therapy (RIG + long-acting agonists), 18 patients with SBA took systemic glucocorticosteroids. The duration of exacerbation in most patients was more than a day. The examination of patients with asthma was carried out in accordance with the principles of GINA, providing for clinical examination, spirography, peak flowmetry, electrocardiography, chest X-ray. During their stay in the hospital, patients received comprehensive treatment, It included RIG, long-acting β2–agonists (LABA), nebulizer therapy (inhalations with berotec or berodual), prolonged theophylline, if necessary, systemic glucocorticosteroids. Patients filled out special questionnaires on

"Asthma Quality of Life Questionnaire" (AQLQ) on the 2nd and 3rd days of hospitalization (after reducing

symptoms of respiratory failure) and on the 15th and 25th days of hospitalization (after treatment).

RESEARCH RESULTS AND THEIR DISCUSSION

At admission to the hospital, patients with MBA had daily asthma symptoms that limited activity and disrupted sleep. The number of night awakenings averaged 1.37 times per night. The need for short-acting β2-agonists in 34 patients was 5.7 ± 2.0 inhalations per day, in six people it exceeded 12 inhalations per day (on average 14.5 ± 3.1), which was accompanied by clinical signs of an overdose of adrenomimetics: an increase in blood pressure, tremor, tachycardia, extrasystole. There was a decrease forced expiratory volume in 1 s (FEV1) ($57.0 \pm 12.2\%$ due), peak expiratory velocity (PEV) ($54.2 \pm 15.6\%$ due) with daily fluctuations of more than 30%. The QL study using the AQLQ questionnaire revealed low values of all

QL scales. Patients noted limitations in their daily activities (the value of the "activity" scale was 2.93 ± 0.2 points); they suffered from symptoms of the disease (2.29 ± 0.16 points); experienced stress due to suffocation, attacks of shortness of breath, shortness of breath, coughing (the scale of "emotions" is 2.67 ± 0.23 points); hard to tolerate negative the influence of environmental factors (3.73 ± 0.35 points). The results of the responses to respiratory questionnaire also showed low values of all QL domains. Patients with MBA underwent complex treatment for 15-25 days, including the use of RIG, LABA, nebulizer therapy with solutions of bronchodilators, prolonged theophylline. According to the indications for prolonged attacks of suffocation, patients were prescribed systemic glucocorticosteroids intravenously or orally in the first days; oxygen therapy was performed.As a result of treatment in patients with MBA have improved overall well-being, decreased symptoms of BA, reduced need for short-acting β2-agonists to 0.72 inhalations per day, and the number of night wakes up to 1.12 times a week. OFV1 by the end of hospitalization was $86.2 \pm 6.9\%$, PSV – $81.5 \pm 12.4\%$ due. Analysis of the results of the QOL study using the AQLQ questionnaire showed that simultaneously with a decrease in the severity

of the symptoms of the disease (the "symptoms" scale changed from 2.29 ± 0.16 points before treatment to 4.52 ± 0.26 points after treatment; $p < 0.001$) increased physical activity indicators (respectively 2.93 ± 0.2 and 5.17 ± 0.24 points; $p < 0.001$). The patients' mood improved, concern about the disease decreased, anxiety due to attacks of suffocation, fear of being left without the necessary medications (the "emotions" scale increased from 2.67 ± 0.23 points before treatment to 4.59 ± 0.21 points after treatment; $p < 0.001$); the influence of negative environmental factors (tobacco smoke, dust, pungent odors, perfumes, adverse meteorological conditions) decreased – the "environment" scale in the BAST group after treatment was 5.36 ± 0.3 points (before treatment – 3.48 ± 0.54 points; $p < 0.001$).

According to the SGRQ questionnaire, there was also a significant positive dynamics of QOL in patients with MBA. The activity of patients under the influence of treatment

increased by more than 2 times (the "symptoms" scale changed from 84.77 ± 5.12 points before treatment to 35.84 ± 3.8 points after treatment; $p < 0.001$). If initially lung disease was considered the biggest problem in the life of 48% of patients with MBA, then after treatment – only 5%, and 43% of respondents showed that lung disease causes them few problems.

Pulmonary disease before treatment interfered with active activity in 90% of patients, and after treatment – 48%. As a result of the treatment, the psychosocial consequences of AD significantly decreased: if before treatment the "influence" scale was 80.18 ± 4.83 points, then after treatment it was 20.98 ± 77; $p < 0.001$ (in the SGRQ questionnaire, unlike AQLQ, the higher the values of the QL scale, the worse QL). When answering questions about the impact of the disease on everyday life, 86% of patients upon admission to the hospital noted that they were concerned about coughing and shortness of breath in public 91% – breathing problems interfere with family members, 81% – lung disease has greatly weakened them. After treatment, these problems remained in 19, 14 and 14, respectively % of patients with MBA. Before treatment, 71% of patients claimed that they get scared or panic if they feel unable to cope with breathing difficulties, 81% – do not cope with their disease. After treatment, all patients overcame these problems.

When answering questions about medical care, 86% of patients believed that medications did not help them much before treatment, and only 5% after treatment.

Two thirds of patients with acute asthma (67%) were embarrassed to take medications in public places, after treatment, such a response was given only in 29% of cases.

71% of patients believed that drugs cause unpleasant side effects, after treatment, only 14% of patients agreed with this. 76% of patients perceived taking medications as a serious burden in life, whereas after treatment – only 29%. After the therapy, not only the psychological and social capabilities of the patients increased significantly, but also their physical activity. So, if 91% of patients with MBA before treatment they were concerned that they moved slower than other people or stopped to rest, and 95% of patients spent more time on homework, then after treatment, these problems bothered 33 and 14% of patients, respectively. Before treatment, all patients with MBA answered that difficulty breathing prevents them from climbing the stairs with things, doing gardening, going grocery shopping, whereas after treatment, only 44% of patients presented these complaints. The overall assessment of the quality of life before treatment was 80.64 ± 3.94 points, after – 34.26 ± 3.6 ($p < 0.001$). Thus, in the group In patients with MBA, positive dynamics was noted not only in clinical and functional data, but also in all indicators of quality of life. Patients with SBA upon admission to the hospital complained of attacks of suffocation, cough, wheezing, severe restriction of physical activity, frequent nocturnal symptoms. The number of nocturnal awakenings due to symptoms of asthma averaged 2.6 times per night, the intake of short-acting β2-agonists in 13 patients corresponded to 7.5 inhalations per day, and in eight people exceeded 12 inhalations per day day. There were low values of FEV1 ($40.6 \pm 6.5\%$), PSV was $36.4 \pm 10.2\%$ due to daily fluctuations of more than 30%. Patients with SBA were treated with higher doses of corticosteroids than those with MBA. Upon discharge, the need for β2- agonists decreased to 1.3 inhalations per day, the number of

nocturnal awakenings decreased to 2.4 times a week against the background of an improvement in the general condition.,

OFV1 was $66.3 \pm 12.3\%$, PSV – $62.9 \pm 19.5\%$ due. A study of the quality of life through the AQLQ questionnaire revealed lower indicators of quality of life in the group SBA than in patients with MBA. Patients with SBA were more likely to suffer from symptoms of the disease, limited activity, and had a lower assessment of their emotional state. After the treatment, all QOL indicators improved, but remained lower than in the group MBA, except for the "environment" scale.

Analyzing the results of the questionnaire, it is necessary to note significantly lower values of the scales "symptoms", "activity" and "total QOL" in the group

SBA before treatment compared to the group of patients with MBA. At discharge, it was observed the improvement of all QOL indicators was almost 2 times, but they were lower than in patients with SBA. When comparing QOL indicators between groups with different disease duration using the AQLQ questionnaire in the MBA group before treatment, significant differences were noted between groups of MBA patients with a disease duration of up to one year and more than 10 years on the "emotions" scale (respectively 2.4 ± 0.4 points and 3.02 ± 0.3 points; $p < 0.05$). Patients suffering from asthma for less than a year experienced more stress due to the exacerbation of the disease, but at the end of treatment they coped with this problem. After the treatment revealed differences in the indicators of physical activity between the MBA groups with a disease duration of less than a year and from a year to 10 years ($5,6 \pm 0.5$ points and 4.98 ± 0.4 points; $p < 0.05$). The severity of the symptoms of the disease decreased more in the group of patients with MBA with a disease duration of less than a year compared to groups from one to 10 years and over 10 years.

CONCLUSION

Differences in the values of the "symptoms" scale were revealed between a group of patients with MBA before treatment with less than one year of disease experience and groups of patients with MBA with a disease duration from one year to 10 years and over 10 years (questionnaire). After the treatment, differences were revealed between a group of patients with MBA with a disease duration of up to a year and groups of MBA patients suffering from the disease from one to 10 years and over 10 years, according to the scales "activity", "influence", "overall quality

of life". When studying the correlation of QL and PSV scales in a group of BAST patients before treatment by The AQLQ questionnaire showed a direct correlation for the scale "activity" ($r = 0.4$; $p < 0.01$); after treatment – for the scales "symptoms" ($r = 0.44$; $p = 0.004$), "the outside world" ($r = 0.33$; $p = 0.04$).

It should be noted the greater sensitivity of the AQLQ questionnaire when comparing patients with severe and moderate asthma, and the SGRQ questionnaire – patients with MBA with different duration of the disease.

Thus, the results of the study showed that the special AQLQ questionnaires

are sensitive tools for the study of QOL, allowing to evaluate (along with clinical and functional indicators) the effectiveness of treatment in patients with exacerbation of asthma.

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