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HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH SEVERE BRONCHIAL ASTHMA

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Abstract: Severe bronchial asthma is associated with substantial impairment of patients' health-related quality of life and daily functioning. The aim of this study was to evaluate quality of life in different phenotypes of severe bronchial asthma using the SF-36 and AQLQ questionnaires. A total of 37 patients aged 18–60 years with severe bronchial asthma were examined. Patients with brittle asthma demonstrated the greatest reduction in general health and vitality, whereas chronic asthma with persistent airflow obstruction was mainly associated with impaired physical functioning. These findings indicate that different severe asthma phenotypes have distinct effects on physical and psychological aspects of quality of life and should be considered when planning individualized treatment.

Keywords: severe bronchial asthma, quality of life, brittle asthma, fatal asthma, AQLQ, SF-36.

ОЦЕНКА КАЧЕСТВА ЖИЗНИ ПАЦИЕНТОВ С ТЯЖЕЛОЙ БРОНХИАЛЬНОЙ АСТМОЙ

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Аннотация: Тяжелая бронхиальная астма сопровождается выраженным снижением качества жизни и ограничением повседневной активности пациентов. Целью исследования явилась оценка качества жизни при различных фенотипах тяжелой бронхиальной астмы с использованием опросников SF-36 и AQLQ. В исследование были включены 37 пациентов в возрасте от 18 до 60 лет с тяжелой бронхиальной астмой. Наиболее

выраженное снижение показателей общего здоровья и жизнеспособности отмечалось у больных с brittle-астмой, тогда как при астме с постоянной бронхиальной обструкцией преимущественно ухудшалось физическое функционирование. Полученные результаты подтверждают, что различные фенотипы тяжелой бронхиальной астмы по-разному влияют на физические и психоэмоциональные компоненты качества жизни и требуют индивидуализированного подхода к лечению.

Ключевые слова: тяжелая бронхиальная астма, качество жизни, brittle-астма, фатальная астма, AQLQ, SF-36.

Introduction: Bronchial asthma is one of the most common chronic respiratory diseases worldwide and remains a major cause of morbidity and reduced quality of life. Despite continuous improvements in diagnostic methods and therapeutic approaches, a considerable proportion of patients fail to achieve adequate disease control. Severe bronchial asthma is characterized by persistent symptoms, frequent exacerbations, recurrent hospitalizations, and an increased risk of life-threatening complications. These clinical features substantially restrict patients' physical activity, social participation, emotional well-being, and overall health status.

Health-related quality of life has become an essential outcome measure in the comprehensive assessment of patients with chronic respiratory diseases. In addition to evaluating clinical symptoms and lung function, quality-of-life assessment provides valuable information regarding the physical, psychological, and social consequences of asthma. Previous studies have demonstrated that disease severity is closely associated with impaired quality of life; however, the influence of different severe asthma phenotypes remains insufficiently investigated. Phenotype-specific characteristics may affect disease progression, treatment response, and patients' daily functioning in different ways. Therefore, evaluating quality of life across various phenotypes of severe bronchial asthma may improve understanding of disease heterogeneity and facilitate personalized treatment strategies. Such an approach may contribute to better symptom control,

improved long-term outcomes, and enhanced overall well-being in patients with severe bronchial asthma.

Aim of the study: To evaluate the health-related quality of life in patients with different phenotypes of severe uncontrolled bronchial asthma and to identify phenotype-specific characteristics that may improve individualized disease management and optimize therapeutic strategies.

Materials and methods. This observational study included 37 adult outpatients with severe bronchial asthma aged 18–60 years. Eligible participants had severe persistent asthma confirmed according to international diagnostic criteria, forced expiratory volume in one second (FEV₁) below 60% of the predicted value, documented reversible airway obstruction, and were receiving high-dose inhaled corticosteroid therapy. Patients with acute exacerbations of chronic diseases or other serious comorbidities were excluded.

The study population was divided into two groups according to treatment response: therapy-sensitive asthma and therapy-resistant asthma. Patients with therapy-resistant disease were further classified into three clinical phenotypes: brittle asthma, fatal asthma, and chronic asthma with persistent airflow obstruction. Clinical evaluation included medical history, physical examination, spirometry, flow–volume curve analysis, and peak expiratory flow monitoring using standardized pulmonary function testing.

Health-related quality of life was assessed using two validated questionnaires: the Medical Outcomes Study Short Form-36 (SF-36) and the Asthma Quality of Life Questionnaire (AQLQ). All participants completed the questionnaires independently during a single study visit. A healthy control group was evaluated with the SF-36 questionnaire to establish reference values for general health status. Statistical analysis was performed using Statistica for Windows 6.0. Continuous variables were expressed as mean $\pm$ standard error, comparisons between groups were performed using the Mann–Whitney U test, and correlations were evaluated

using Spearman's rank correlation coefficient. Statistical significance was defined as $p < 0.05$.

Results. Assessment of health-related quality of life demonstrated significant impairment in all patients with severe bronchial asthma compared with healthy individuals. Patients with therapy-resistant asthma showed more severe clinical manifestations, reduced pulmonary function, and a higher frequency of exacerbations than those with therapy-sensitive disease ($p < 0.05$). According to the SF-36 questionnaire, patients with the brittle asthma phenotype had the lowest scores for general health and vitality, reflecting substantial deterioration in psychological well-being and overall health perception. In contrast, patients with chronic asthma accompanied by persistent airflow obstruction exhibited the greatest reduction in physical functioning and daily activity, which was closely associated with decreased FEV₁ values. Individuals with the fatal asthma phenotype demonstrated relatively stable self-perceived health and better emotional adaptation than other severe asthma phenotypes. The AQLQ questionnaire confirmed these findings, showing greater emotional impairment and increased sensitivity to environmental factors in patients with brittle asthma, whereas those with chronic airflow obstruction experienced the greatest limitations in physical activity. Correlation analysis revealed significant associations between pulmonary function parameters and both physical and psychological quality-of-life domains. Overall, each severe asthma phenotype demonstrated a distinct pattern of quality-of-life impairment, indicating that phenotype-specific characteristics should be considered when developing individualized treatment strategies and evaluating therapeutic effectiveness.

Conclusions: Health-related quality of life is an important outcome measure in the management of patients with severe bronchial asthma. Significant impairment was observed across both physical and psychological domains, with the pattern of deterioration varying according to asthma phenotype. Assessment of quality of life provides additional information beyond conventional clinical and functional

indicators. Incorporating standardized questionnaires into routine clinical practice may improve individualized treatment planning and long-term disease monitoring. Particular attention should be given to patients with marked physical or emotional impairment to optimize comprehensive management. Routine evaluation of quality of life may contribute to better therapeutic outcomes and improved patient well-being.

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