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Clinical Problems

Quality of Life in Asthma and Allergic Rhinitis: A Hospital-Based Comparative Study

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Abstract

Background: Both asthma and allergic rhinitis are well-known diseases to cause burden in the daily life of patients. Since they are mostly comorbid, it is difficult to discriminate between them regarding their individual impacts on quality of life. The aim of our study was to compare asthma and allergic rhinitis in terms of quality of life so that the impairment of each disease on quality of life can be distinguished. **Methods:** In a university hospital, 93 patients with asthma and 98 patients with allergic rhinitis, each without any other comorbid condition, were engaged in this study as subjects. Health-related quality of life was measured by Medical Outcomes Study Short-Form General Health Survey 36 (MOS SF-36). **Results:** The allergic rhinitis group had a lower mean score than the asthma group in the social function domain. In the physical function and role limitation due to physical problems domains, the asthma group scored lower than the allergic rhinitis group. The allergic rhinitis group had a better perception of general health than the asthma group. The physical summary score was lower in the asthma group than in the rhinitis group, whereas the mental summary score was not different between the two groups. **Conclusions:** In asthma, impairments on quality of life of patients mostly concern physical incapability, whereas in allergic rhinitis these concern social withdrawal. Clinicians must pay special attention to these features in order to help patients in their daily life.

Keywords: asthma, allergic rhinitis, quality of life, SF-36

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INTRODUCTION

Allergic disorders are associated with a variety of limitations in the patient's daily life. Asthma can adversely affect the physical, psychological, and social domains of health-related quality of life [1]. Using SF-36, it was found that the subscales most affected are general health perceptions, vitality, and physical role functioning [2,3]. However, mental, emotional role and social scores were similar in both groups. Physical components appear to be the most adversely affected [4]. Even though it is suggested that the conventional clinical indices of asthma severity correlate only weakly with how patients are actually feeling and how they are able to function in their daily lives because of their asthma, Zillich et al. pointed out that quality of life is more strongly related to subjective than to objective measure of disease severity [5,6,7].

Allergic rhinitis symptoms can also have detrimental effects on the physical, psychological, and social aspects of a patient's life [8]. Bousquet et al. found significant impairment in physical and social functioning, role limitations due to physical problems and emotional problems, mental health, energy/fatigue, pain and general health perception [9]. Similar to asthma, in rhinitis, correlation between conventional nasal symptoms and health-related quality of life is only weak to moderate [10,11].

As these two diseases often coexist, the impact of comorbid allergic rhinitis and asthma on quality of life has also been studied. Lynaert et al. showed that asthma was not found to further impair the quality of life in subjects with allergic rhinitis for concepts related to mental disability and well-being. Moreover, patients with comorbid allergic rhinitis and asthma experienced more physical limitations than patients with allergic rhinitis alone [12]. However, since rhinitis existed in the majority of patients, the relative contribution of each disease could not be thoroughly investigated.

Since allergic rhinitis and asthma have pathophysiological and clinical similarities, a better understanding of the nature of the rhinitis-asthma relationship might allow the creation of better strategies for the integral management of patients with these diseases. Therefore, it will be useful to discriminate the impact of each, allergic rhinitis and asthma, on quality of life, so that specific appropriate intervention strategies can be carried out.

In this study, we aimed to investigate and compare the impact of allergic rhinitis and asthma on health-related quality of life. In this regard, the major burdens of both allergic rhinitis and asthma will be shown separately and in comparison, with an understanding of the specific

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Table 1. The domain scores of the SF-36 of the asthma and allergic rhinitis groups

	Asthma	Allergic Rhinitis	Z	Significance (p)
Social function	64.2±23.7	47.2±11.9	-6.089	<0.0001
Physical function	64.3±24.3	80.9±18.7	-4.996	<0.0001
Role-emotional	50.9±42.4	56.140.2	-0.879	NS
Role-physical	49.4±40.8	61.9±42.1	-2.129	0.033
Pain	58.3±22.1	60.6±24.5	-0.929	NS
Vitality	53.6±22.1	58.8±20.4	-1.909	NS
Mental health	57.8±19.1	61.6±17.9	-1.542	NS
General health	39.6±21.7	54.5±21.1	-4.563	<0.0001
Physical component score	56.8±22.6	65.6±21.7	-2.957	0.007
Mental component score	57.6±23.6	54.9±18.0	-0.907	NS

contribution of each disease to the total quality of life impairment in respiratory allergic diseases.

MATERIALS AND METHODS

The study was carried out in Celal Bayar University Hospital, Manisa, Turkey with the collaboration of the Departments of Psychiatry, Chest Diseases, and Allergy and Immunology between November 2000 and July 2001. All patients invited to the study were asked to provide informed consent.

Subjects

The asthma group was comprised of patients attending the Asthma Section of the Department of Chest Diseases. Thus, 100 patients with asthma were enrolled in the study. The diagnosis for asthma was made according to GINA (Global Initiative for Asthma) criteria and the patients were all classified as mild intermittent or persistent in severity. For the allergic rhinitis group, 100 patients attending the Department of Allergy and Immunology were invited. The diagnosis for allergic rhinitis was made according to the clinical presentation and clinical history. To support the allergy diagnosis, the Skin Prick Test (SPT) was performed according to the European Academy of Allergology and Clinical Immunology guidelines. Patients aged between 18-65 years, with an education of at least five years, and capable of following the instructions of the instrument were included in the study. For each group of patients, they were all in remission at the time of recruitment. In each of the two groups, patients with any other comorbid diseases, including allergic diseases, were excluded. Thus, the two groups consisted of patients with asthma alone and allergic rhinitis alone, respectively.

At the end of the study, 93 patients in the asthma group and 98 patients in the allergic rhinitis group constituted the subject groups.

Instrument

Medical Outcomes Study Short-Form General Health Survey 36 (MOS SF-36) has strong discriminative properties in patients with respiratory allergic diseases [13,14]. The SF-36 was developed by Ware and Sherbourne, and was adapted into Turkish by Kocyigit et al. [15,16]. The SF-36 is a self-rated questionnaire and uses 36 items to assess physical and mental components through eight health domains: physical and social functions, role limitations due to emotional and physical problems, bodily pain, vitality, mental health, and general health perception. Every domain is scored separately on a 100–point scale, with 100 indicating perfect health. In addition to these domains, physical component score (PCS) and mental component score (MCS) are also calculated. SF-36 was filled out by the patients with some help (but not with an interview) in the Department of Psychiatry where they were referred.

Statistical Analysis

In the comparison of the study groups in terms of the mean scores of SF-36 domains, since the mean scores were not normally distributed, non-parametric Mann-Whitney U test was performed with a confidence interval of 95%. The mean age of the two groups and duration of symptoms were subjected to Student's t-test, whereas gender difference was calculated to chi-square.

RESULTS

The study was performed with two groups of patients - the asthma group (n=93) and the allergic rhinitis group (n=98). The mean age of the asthma group (43.6±10.5, range: 18-65) was statistically higher than that of the allergic rhinitis group (mean: 29.2±8.5, range: 19-51) (t=9.884, p<0.0001). In the asthma group, 56 of the patients (60.2%) were male, whereas 62.2% of the allergic rhinitis group (n=61) were male; this difference was not statistically significant (p>0.05). Duration of symptoms did not differ in the two groups (asthma: 10.4±7.6 years, allergic rhinitis: 8.3±4.7 years, p>0.05).

The mean scores of all domains of the asthma and allergic rhinitis groups obtained from the SF-36 are presented in Table 1. When the mean scores of the SF-36 domains were compared, the allergic rhinitis group had a lower mean score than the asthma group in the social function domain (Z=-6.089, p<0.0001). In the physical

function and role limitation due to physical problems domains, the asthma group scored lower than the allergic rhinitis group (Z=-4.996, p<0.0001 and Z=-2.129, p=0.038, respectively). The allergic rhinitis group had a better perception of general health than the asthma group (Z=-4.563, p<0.0001).

Physical component score (PCS) was significantly lower in the asthma group than in the allergic rhinitis group (Z=-2.957, p=0.007). On the other hand, mental component score (MCS) was similar in the two groups (Z=-0.907, p>.05).

DISCUSSION

Even though asthma and allergic rhinitis have many similarities in terms of clinical features, the burdens they cause in patient quality of life differ. Therefore, the assessment of quality of life of patients with respiratory allergic diseases reveals useful information so that parameters other than clinical indices are provided that must serve as points of interest in the management of these patients.

The asthma group differed from the allergic rhinitis group in terms of physical status. Both physical functioning and role limitations due to physical problems and general health were significantly impaired in the asthma group. As Terreehorst et al. suggested, asthma is observed to have an independent negative effect on physical functioning, role limitations-physical and general health when assessed with other allergic diseases [17]. Similarly, Ried et al. showed that general health perception, vitality, and physical role functioning are the most affected domains in asthma [3]. In older asthmatics, Dyer and Sinclair found that physical components are specifically impaired, whereas mental and social parameters are not adversely affected compared to controls [4]. In the daily practice of respiratory allergy clinics, asthma must be especially addressed in terms of its detrimental effect on physical parameters.

The most outstanding features of allergic rhinitis are sneezing, itching, rhinorrhea, and associated eye problems. These symptoms are rather bothersome in social life. In this present study, the allergic rhinitis group had poorer social functioning than the asthma group; however, psychological well-being was similar in both groups. In fact, allergic rhinitis is known to be associated with extreme shyness, or even with social anxiety [18]. As Leynaert et al. reported, subjects with allergic rhinitis but not asthma were more likely to experience problems with social activities and difficulties with daily activities as a result of emotional problems [12]. Even though allergic rhinitis is not associated with a life-threatening course, the annoying symptomatology is the leading cause affecting the quality of life of these patients, impairing them socially. Desensitizing the patients to their symptomatology in daily life may be the target of clinicians to avoid their social withdrawal.

One shortcoming of the study is that the two groups were not matched in terms of age, even though there was no difference in terms of disease duration. Even though health-related quality of life is mainly affected by the duration of the disease, the age difference in our study patients should also be kept in mind.

Respiratory allergic diseases have detrimental effects on the quality of life of patients. These effects are mostly physical incapability in asthma and social withdrawal in allergic rhinitis. Clinicians must pay special attention to these consequences and attempt to develop some strategies to overcome these burdens in the long-term management.

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