Effect of severity of asthma on quality of life

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ÖZET

Astım şiddetinin yaşam kalitesi üzerine etkisi

Çalışmada astımlılarda yaşam kalitesinin ve sağlık ilişkili yaşam kalitesiyle hastalık şiddeti arasındaki olası ilişkinin ve diğer demografik faktörlerin jenerik skala, SF-36 anketi ile değerlendirilmesi amaçlandı. Yüz iki astımlı hasta çalışmaya alındı. SF-36 anketinin sekiz alandaki skorları yaş, cinsiyet, eğitim düzeyi ve astım şiddetine göre değerlendirildi. Seksen dört (%83) kadın ve 18 (%17) erkek hastanın yaş ortalamaları 42.86 ± 11.15. Elli iki (%51) hastanın eğitim düzeyleri iyi ve 50 (%49) hastanın eğitim düzeyi düşüktü. Atopi oranı %81 idi. Hafif intermittan, hafif persistan ve orta-ağır persistan hasta sayısı sırasıyla 27 (%26), 46 (%45) ve 29 (%29) olarak bulundu. Kadınlarda fiziksel fonksiyonlar (p= 0.000), fiziksel rol güçlüğü (p= 0.0049), canlılık (p= 0.045) ve sosyal fonksiyonların (p= 0.025) daha kötü olduğu belirlendi. Eğitim düzeyi düşük olan grupta fiziksel fonksiyonlar (p= 0.001), fiziksel rol güçlüğü (p= 0.039), canlılık (p= 0.045), duygusal rol güçlüğü (p= 0.046), genel sağlık (p= 0.030) ve zihinsel sağlık (p= 0.044) daha kötüydü. Zihinsel sağlık atopi varlığında bozuktu (p= 0.035). Orta ve ağır dereceli gruba göre hafif intermittan grupta fiziksel fonksiyonlar daha iyiydi (p= 0.015). Canlılık, duygusal rol güçlükleri hafif intermittan grupta hafif persistan gruba oranla daha iyiydi (p= 0.042, p= 0.007). Sağlıkla ilişkili yaşam kalitesi skorları ve astım şiddeti diğer objektif parametrelere göre iyi korelasyon göstermekteydi. Astım tedavisinin birincil amaçlarından birisi de diğer fonksiyonel parametreler olduğu kadar yaşam kalitesinin iyileştirilmesi olmalıdır.

Anahtar Kelimeler: *Astım, yaşam kalitesi, SF-36.*

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SUMMARY

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This study is aimed to evaluate the health related quality of life (HRQL) in asthmatics and the probable association between HRQL and disease severity and also other demographic factors by using a generic scale, SF-36 questionnaire. One-hundred and two asthmatics were enrolled. The scores of the 8 domains of SF-36 questionnaire were evaluated according to age, gender, status of education and compared with the severity of asthma. The mean age of 84 (83%) female and 18 (17%) male patients was 42.86 ± 11.15. Fifty-two of them was well educated (51%) and 50 was poorly educated (49%). Atopy ratio was 81%. Mild intermittent, mild persistent and moderate-severe persistent groups were 27 (26%), 46 (45%) and 29 (29%) respectively. Female gender were worse in physical functioning (p= 0.000), physical role difficulties (p= 0.0049), vitality (p= 0.045) and social functioning (p= 0.025). Poorly educated group were worse in physical functioning (p= 0.001), physical role difficulties (p= 0.039), vitality (p= 0.045), emotional role difficulties (p= 0.046), general health (p= 0.030) and mental health (p= 0.044). Mental health was worse in the presence of atopy (p= 0.035). Physical functioning was better in mild intermittent group than moderate and severe persistent group (p= 0.024). General health was better in mild intermittent group than mild persistent group (p= 0.018), moderate and severe persistent group (p= 0.015). Vitality and emotional role difficulties was better in mild intermittent than mild persistent group (p= 0.042, p= 0.007). The HRQL scores and severity of asthma is well correlated like other objective parameters. So one of the primary goals in management of asthma should also improve QOL as well as functional parameters.

Key Words: *Asthma, quality of life, SF-36.*

Asthma is a chronic inflammatory disorder of the airways that is presented with recurrent episodes of wheezing, breathlessness, chest tightness and coughing (1).

Asthma, as other obstructive airways diseases, may have a restrictive affect on the physical, emotional and social functionings of patients and therefore may have adverse effects on the quality of life (QOL). The importance of these restrictions on social life may be greater in severe asthma or when symptoms are inadequately controlled (2).

Health related QOL (HRQL) is a term that defines the reactions of the patients to their health status rather than the determination of health status. Health status measurement quantifies the impact of disease on patients' daily life, health and well-being objectively (3).

Clinical trials usually focus on asthma control as measured by FEV_1, PEF, symptom scores and medication requirement. However improvement in these measures in asthma could translate directly into improvements in HRQL. Recently HRQL measurement have been in the target of many studies about asthma (4).

In this study, we aimed to evaluate the HRQL in asthmatics and the probable association between HRQL and disease severity and also other demographic factors by using a generic scale, SF-36 questionnaire.

MATERIALS and METHODS

One-hundred and two asthmatics diagnosed according to GINA criteria, admitted to outpatient pulmonary department during one year period were enrolled (1). Age, gender, occupation and education status, smoking habits were recorded. Turkish version of SF-36 questionnaire was used for evaluation of quality of life (5,6). Each patient filled out the questionnaire properly. SF-36

questionnaire was based on 36 items to represent 8 health domains; social functioning, physical functioning, emotional role difficulties, physical role difficulties, pain, vitality, mental health and general health perception. The scores of these 8 domains were evaluated according to age, gender, status of education. All patients had pulmonary function test performed by the same physician using with Jaeger Master Screen Pneumo device. The severity of asthma was classified according to GINA criteria in terms of FEV_1, daily and night symptoms and need for rescue medication (1). Atopy was evaluated by history.

Well/poor educated: Education level over high school is accepted as well educated.

The patients in severe and moderate groups were merged and statistical comparisons were done in three groups (mild intermittant, mild persistant, moderate + severe persistant) due to the small number of patients in the severe group.

Statistical analysis of the data was done by SPSS package program and values Student's t-test and ANOVA were performed in the comparison of variances of SF-36 scores. $p< 0.05$ were considered as significant.

RESULTS

The mean age of 84 (83%) female and 18 (17%) male patients was 42.86 ± 11.15. Fifty-two of them were well educated (51%) and 50 were poorly educated (49%). Atopy rate was 81%.

There was no relationship between age and QOL scores ($p> 0.05$). Female gender was worse in physical functioning ($p< 0.001$), physical role difficulties ($p= 0.0049$), vitality ($p= 0.045$) and social functioning ($p= 0.025$). Housewives were worse in physical functioning ($p= 0.000$), vitality ($p= 0.015$) and emotional role difficulties ($p= 0.029$). Poorly educated group was worse in physical functioning ($p= 0.001$), physical role difficulties ($p= 0.039$), vitality ($p= 0.045$), emotional role difficulties ($p= 0.046$), general health ($p= 0.030$) and mental health ($p= 0.044$). Mental health was worse in the presence of atopy ($p= 0.035$). The QOL scores according to demographic features are shown on Table 1.

Table 1. Quality of life (QOL) scores according to demographic features.

	Physical functioning	Physical role difficulties	General health	Vitality	Emotional role difficulties	Mental health	Pain	Social functioning
Gender								
Male	82.5 ± 15.9	68.0 ± 40.0	48.9 ± 18.5	64.7 ± 51.9	62.9 ± 44.1	66.3 ± 17.5	62.0 ± 23.5	76.3 ± 15.3
Female	59.32 ± 5.8*	46.4 ± 41.6*	39.7 ± 20.2	51.9 ± 21.5*	51.5 ± 44.3	58.4 ± 21.2	59.9 ± 21.1	65.5 ± 26.1*
Occupation								
Housewife	54.6 ± 27.0*	47.0 ± 43.3	38.7 ± 20.1	49.3 ± 20.5*	45.7 ± 44.5*	56.8 ± 21.2	60.4 ± 22.3	65.1 ± 26.6
Others	75.0 ± 18.9	56.0 ± 40.2	44.6 ± 19.5	60.6 ± 23.2	65.0 ± 41.4	63.7 ± 19.9	59.9 ± 20.5	70.1 ± 21.6
Education								
Poorly educated	55.4 ± 25.8*	41.5 ± 43.3*	36.8 ± 22.8*	49.6 ± 21.6*	44.6 ± 44.9*	55.4 ± 21.5*	58.8 ± 22.8	63.8 ± 26.7
Well educated	71.7 ± 23.4	58.6 ± 39.2	45.8 ± 20.1	58.5 ± 22.1	62.1 ± 42.2	63.8 ± 19.4	61.8 ± 21.1	71.0 ± 22.5
Atopy								
Positive	61.7 ± 25.7	49.6 ± 42.3	39.9 ± 20.6	52.8 ± 22.8	52.2 ± 44.8	57.9 ± 21.0*	59.9 ± 20.9	67.2 ± 23.7
Negative	71.3 ± 25.5	52.6 ± 41.5	47.2 ± 17.2	60.5 ± 18.4	59.6 ± 42.4	68.4 ± 17.5	62.1 ± 24.0	68.7 ± 29.7

* $p< 0.05$

There were 27 (26%), 46 (45%) and 29 (29%) patients in mild intermittant, mild persistant and moderate + severe persistent groups respectively. There was no significant difference in their demographic features among these three groups ($p > 0.05$).

Physical functioning was better in mild intermittant group than moderate and severe persistant group ($p = 0.024$). General health was better in mild intermittent group than mild persistent group ($p = 0.018$), moderate and severe persistent group ($p = 0.015$). Vitality and emotional role difficulties was better in mild intermittant than mild persistant group ($p = 0.042$, $p = 0.007$) (Table 2).

DISCUSSION

QOL was assessed in a group of patients with asthma and it was found to be lower than normal population. The demographic features of asthmatic patients might have some impact on the scores of QOL. The correlation of age and QOL in chronic lung diseases is not clear. Ince and Renwick did not find any relation between age and QOL in chronic obstructive lung diseases while Guneylioglu has reported that QOL scores of the patients with sarcoidosis had worsen as age progressed (7-9). Our study also did not find any worsening in QOL scores by age. These might be related to the natural course of asthma, since asthma in elderly is a relatively milder disease. Another reason might be the fact that these patients got learned to live with asthma by years.

Asthma is a disease mostly seen in females in adult population (10). When we looked at the relation of gender and QOL in asthmatics, we saw that female asthmatics had restrictions in coping with daily physical activities and so in participating in social affairs. Our female patient population, of which a great majority were housewife, had worse QOL scores. Belloch also reported that women had worse QOL and had higher scores of anxiety and depression (11). This may related to the tendency of women to express their feelings more easily.

In this study, it was observed that the presence of atopy made a negative effect on mental health. This may be due to the fact that atopic patients had additional comorbid diseases such as allergic rhinits, conjuctivitis and dermatitis and this probably has made a deteriorating effect on their QOL. Leynaert also reported a significant difference in physical functionings in patients having both asthma and allergic rhinitis than the patients having pure asthma (12).

Most clinical trials in asthma have focused on pulmonary objective outcomes that are primarily of the importance of the clinician. Very few have assessed whether patients feel better and can function better in day-to-day activities (13).

Conventional measures such as spirometry, medication use, symptom severity, airway hyper-

Table 2. Significant QOL scores according to asthma severity.

	Mild intermittant	Mild persistant	Moderate-severe persistant	p
Physical functioning	75.18 ± 25.5	61.02 ± 24.1	56.55 ± 25.9	Mild intermittant-moderate-severe persistant 0.024
General health	52.03 ± 22.4	38.28 ± 17.4	36.55 ± 19.2	Mild intermittant-mild persistant 0.018
				Mild intermittant-moderate-severe persistant 0.015
Vitality	63.33 ± 23.1	49.77 ± 19.0	52.75 ± 24.1	Mild intermittant-mild persistant 0.042
Emotional role difficulties	75.30 ± 36.5	42.02 ± 36.5	51.72 ± 42.3	Mild intermittant-mild persistant 0.007

QOL: Quality of life.

responsiveness and sputum analysis provide valuable information about the inflammatory status of the airways but they tell us little about the functional impairments (physical, emotional and social) that are important to asthma patients in their every day lives (14,15).

HRQL can be defined as functional effects of an illness and its consequent therapy in a patient as perceived by the patient (14). The differences in the perception asthma may reflect differences in beliefs about health. Physicians see health as absence of symptoms whereas patients regard being healthy as "being able" (16). At that point the correlation of clinical measures with HRQL becomes very important. These correlation may be weak or moderate. As a result, to obtain a complete picture of the patient's health status HRQL must be measured besides conventional clinical indices (14). Asthma severity is defined by changes in predicted FEV_1, symptom scores and medication use (1). The groups in terms of severity in this study were almost similar in demographic features ($p > 0.05$) and this made the comparisons of these three groups done free of the effects of demographic factors.

The QOL scores may show correlation with these objective parameters. Some cross-sectional studies have shown that patient populations with a lower FEV_1 have worse HRQL (16). In this study, QOL scores of mild intermittent asthmatic group were highest. The moderate-severe group had worse general health scores. Bousquet in his study of 252 asthmatic patients reported that all SF-36 categories were highly significantly correlated with the severity of asthma assessed by clinical score of asthma (2). Hooi reported that asthmatics with moderate or severe disease had significantly lower scores in all domains of SF-36 questionnaire and added that QOL was significantly impaired in adult asthmatics with current respiratory symptoms (17). Moy also mentioned that HRQL scores were significantly associated with asthma severity defined by lung functions or symptoms (18). Ried emphasized that the most affected subscales of the SF-36 were general health perceptions, vitality and physical role function (19). General health and physical role function subscales were significantly lower in moderate-severe group of our study. The scores of vitality, emotional role difficulties and general health subscales were better in mild intermittent group compared to mild persistent group.

The absence of a strong correlation between symptoms and spirometric values has been shown in many studies (3). Although FEV_1 is a useful measure for diagnosis and prognosis of obstructive diseases, it is not a good predictor of the symptoms, but a good correlation between FEV_1 and QOL scores have been reported in many studies (20,21). With respect to this good correlation of QOL scores with severity stages in our study and the studies above, one can say routine follow-up procedures should include HRQL measurements.

As a conclusion, the HRQL scores and severity of asthma is well correlated like other objective parameters. So one of the primary goals in management of asthma should also be to improve QOL as well as functional parameters.

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