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Assesment life quality of familial mediterranean fever patients by short form-36 and its relationship with disease parameters

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Abstract. – BACKGROUND: Familial Mediterranean fever is an auto-inflammatory disorder. Long term complications of the disease include decreased quality of life. The measurement of quality of life in the patients with chronic disease has become an important research topic during the last years.

AIM: We aimed to evaluate life quality of the FMF patients by SF-36, and examine its relationship with the disease parameters.

PATIENTS AND METHODS: One hundred voluntary patients (69 female, 31 male) admitted to the rheumatology clinic were included in the study. The control group consisted of 100 healthy individuals. All subjects in the study were asked to complete SF-36 questionnaire. Age of onset of FMF, age at diagnosis, age at the beginning of colchicine therapy, number of attacks per month, family history of FMF and dialysis were inquired of patients with FMF. Disease severity was determined using the FMF severity score.

RESULTS: The mean age of the patient group was 31±12 and that of the control group was 29±9. Sixty-nine patients (69%) were female, and 31 patients were male (31%) in both groups. The mean scores of the physical function, physical role function, emotional role function, mental health, and general health parameters of the patients were statistically significantly lower than those of healthy volunteers ($p < 0.05$). The difference in social function and vitality between two groups was found to be insignificant ($p > 0.05$).

CONCLUSIONS: We have shown that FMF had a negative impact on SF-36. FMF reduces quality of life both in physical and mental dimensions.

Key Words:
Familial Mediterranean fever, Quality of life, Short form-36, Atack.

Introduction

Familial Mediterranean Fever (FMF), is a hereditary inflammatory disease characterized by periodically repeating attacks of fever and polyserositis. FMF that is inherited as autosomal recessive, affects primarily the populations of Mediterranean origin (Non-Ashkenazi Jews, Armenians, Turks and Arabs), but it has increasingly been reported from anywhere in the world due to human migrations. The FMF gene (MEFV)[1,2] was mapped to the short arm of chromosome 16.

Today, the most effective treatment for FMF is colchicine. Colchicine prevents the occurrence of attacks and the development of amyloidosis[3]. One of the most important parameters of prognosis of FMF is amyloidosis. Before the introduction of colchicine treatment, more than one third of the patients with FMF had been losing their lives below age 40[4]. An increase in life expectancy and the number of years lived with disability made the concept of quality of life important in FMF as in other chronic diseases[5,6]. The measurement of quality of life in the patients with chronic disease has become an important research topic during the last 20 years[7]. The quality of life scales are used to identify the specific needs of the patient, determine psychosocial problems, and evaluate prognosis or help decide treatment modalities in patients with chronic diseases[8]. Studies on quality of life might contribute to the development of new health policies in addition to treatment[9,10].

When emergent admissions, side effects of the drugs used, and disruption in functioning due

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sudden onset of episodes are taken into account, it is obvious that FMF seriously affects the quality of life[5]. To the best of our knowledge, there are not adequate studies examining the impact of FMF on quality of life, in the literature[11]. The aim of this study is to investigate the health-related quality of life and the relationship between quality of life and clinical features in patients with FMF.

Patients and Methods

Study Population

One hundred voluntary patients (69 female, 31 male) admitted to the Rheumatology Clinic at Cumhuriyet University Medical School were included in the study. The patients were diagnosed according to the criteria identified by Livnech et al[12]. The control group consisted of 100 healthy individuals (hospital staff, physicians and interns). The study protocol was approved by the Ethics Committee of Cumhuriyet University Medical School (29.09.2009, protocol number: 2010-06/44).

Procedure

All subjects in the study were asked to complete SF-36 questionnaire. Age of onset of FMF, age at diagnosis, age at the beginning of colchicine therapy, number of attacks per month, family history of FMF and dialysis were inquired of patients with FMF. The patients were categorized as compliant or non-compliant based on their colchicine use (compliance: receiving at least two doses a day). The response to colchicine was classified as complete response, partial response or non-response depending on the time between attacks. Side effects of colchicine were evaluated in terms of a history of appendectomy or exploratory laparotomy, recurrent fever, abdominal pain, chest pain, arthritis, MEFV mutation (retrospective data), and amyloidosis. Disease severity was determined using the FMF severity score.

Measuring Tools

Sociodemographic Data Form: It is a question form that was developed by researchers to identify the sociodemographic data of the subjects. It includes sociodemographic characteristics of the patients such as age, gender, and marital status.

SF-36: SF-36 includes 36 items assessing the health status on 8 subscales. First four subscales assess physical HRQOL: physical functioning, role limitations-physical, bodily pain, general health perception. Second four subscales assess mental HRQOL: role limitations due to emotional problems, vitality, mental health, social functioning. For those subscales, a score ranging from 0 (worst) to 100 (best) is calculated[13]. SF-36 has been validated for Turkish patients[14].

Statistical Analysis

Statistical Package for Social Sciences software (SPSS 14, Chicago, IL, USA) was used for analysis. Descriptive parameters were shown as mean ± standard deviation or in percentages. Variables were checked for normal distribution by Kruskal-Wallis test, and normally distributed variables were compared using the Student'*t* test. Abnormally distributed variables were compared using Mann-Whitney U test. Pearson's chi-square test was used to analyze the differences in means and proportions between patients and controls. Pearson's and Spearman's correlation coefficients were used to test the relationship between the parameters. A p value of <0.05 was considered significant.

Results

The mean age of the patient group was 31±12 and that of the control group was 29±9. Sixty-nine patients (69%) were female, and 31 patients were male (31%) in both groups. Sixty-one per cent of the patients was married, 39% of the patients was single, whereas fifty-four per cent of the controls was married. No significant difference in sociodemographic variables were found between two groups ($p > 0.05$).

The mean scores of the physical function, physical role function, emotional role function, mental health, and general health parameters of the patients were statistically significantly lower than those of healthy volunteers ($p < 0.05$). The difference in social function and vitality between two groups was found to be insignificant ($p > 0.05$). Comparison of quality of life scores of each grup are presented in Table I.

Mean age of the patients at diagnosis was 26±13 years (range, 3 to 59 years). The average age of the patients at the time of starting colchicine therapy was 27±13 years (range, 3 to 59 years). Eighty-seven per cent of the patients (n=87) have been using colchicine regularly. The complete response was detected in 71 patients

Table I. The comparison of SF-36 components of the patients and the control group.

	Patients (n=100)**	Controls (n=100)**	p	t
Physical Function	76.6 ± 14.3	85.5 ± 16.6	0.001*	4.04
Social Function	38.7 ± 9.7	36.8 ± 9.6	0.001*	1.36
Physical Role Function	43.4 ± 47.5	73.5 ± 39.3	0.001*	4.87
Emotional Role Function	45.6 ± 46.1	71.6 ± 40.3	0.001*	4.24
Mental Health	58.6 ± 11.1	61.48 ± 9.6	0.001*	3.87
Vitality	55.2 ± 1.9	54.10 ± 9.3	0.437	0.78
Pain	43.7 ± 25.8	26.40 ± 20.7	0.001*	5.23
General Health	47.65 ± 8.60	50.11 ± 7.90	0.036*	2.10

*$p < 0.05$ significant. **mean ± SD.

(71%). Twelve per cent of the patients (n=12) had been experiencing attacks more than once a month while 26 patients (26%) had one attack per 6 months. According to FMF severity score, 27% of the patients were considered to have mild, 68% moderate, and 5% severe disease. It was found that 17% of the patients with FMF had homozygosus mutation, 39% had single heterozygosus mutation, and 34% had two compound heterozygous while 3% had no MEFV mutation. The results of the six patients who had MEFV mutation could not be obtained. Twenty-six patients (26%) had a history of appendectomy. The difference in the relationship between appendectomy and MEFV mutation was found to be statistically insignificant between groups ($p > 0.05$). The difference in mutation type in the patients with FMF, that have a kinship between parents, was significant. Homozygosus mutation rate was found to be higher among patiens whose parents were blood-related (Clinical characteristics of the patients were shown in Table II).

Table II. Clinical characteristics of FMF patients.

Parameter	Status	n (%)
Using colchicine	Regular	87 (87%)
	Unreguler	13 (13%)
Response to colchicine	Complete	71 (71%)
	Incomplete	29 (29%)
Number of attacks	≥ 2 attacks per month	12 (12%)
	One attack per month	49 (49%)
	One attack per 2 months	13 (13%)
	One attacks per 6 months	26 (26%)
Disease severity score	Mild	27 (27%)
	Moderate	68 (68%)
	Severe	5 (5%)
Mutation status	Homozigot	17 (18.2%)
	One heterozygous	39 (41.9%)
	Two heterozygous	34 (36.6%)
	No mutation	3 (3.3%)

When the relationship between colchicine response and SF-36 subscale scores was examined, physical function, physical role function, and emotional role function scores of the patients with complete response to colchicine were statistically significantly higher than those of the patients with partial response to colchicine ($p < 0.05$). We also investigated the association of SF-36 subscale scores and colchicine use traits and found that mean Physical Role Function score of the compliant patients was statistically significantly higher than that of the non-compliant ones ($p < 0.05$). Mean vitality subscale score of the patients, without MEFV mutation was also found to be significantly higher than that of the patients with MEFV mutation ($p < 0.05$).

Mean scores on physical function, mental health, vitality and general health subsacales of the patients with mild disease severity score were higher than the scores of the patients with severe severity score, however the difference was not statistically significant. According to correlation analysis there was no statistically significant relationship between the number of attacks and quality of life subscales ($p > 0.05$). The components of quality of life according to clinical characterictics of the patients are shown in Table III.

Discussion

In the present study, we have investigated the quality of life of patients with FMF and the rela-

Table III. Relationship between quality of life and clinical features of patients.

Parameter	Status	PF**	SF**	PRF**	ERF**	MH**	V**	Pain**	GH**
Using colchicine	Regular	77.9 ± 11.8	38.6 ± 9.3	47.1 ± 48.1	46.3 ± 45.8	58.3 ± 9.2	55.3 ± 9.3	43.9 ± 25.1	50.4 ± 7.2
	Unregular	67.7 ± 23.9	39.7 ± 12.3	19.2 ± 37.1	41.0 ± 49.3	60 ± 12.6	54.2 ± 9.3	42.3 ± 31.1	50.1 ± 11.8
	p values	0.15	0.67	0.026*	0.702	0.567	0.689	0.835	0.894
Response to colchicine	complete	79.1 ± 11.7	39.8 ± 10.1	54.5 ± 48.3	52.1 ± 46.7	59.5 ± 9.8	55.7 ± 8.8	49.3 ± 25.4	50.5 ± 7.4
	incomplete	70.7 ± 17.9	36.1 ± 8.2	16.2 ± 32.9	29.8 ± 41.1	56.1 ± 9.1	53.8 ± 10.3	41.4 ± 25.8	49.9 ± 8.2
	p values	0.007*	0.077	0.001*	0.022*	0.109	0.336	0.167	0.32
Number of attacks	≥ 2 attacks per month	70.4 ± 17.7	41.2 ± 10.6	30.7 ± 44.6	41.5 ± 42.9	59.7 ± 4.9	53.3 ± 9.6	47.7 ± 22.6	49.4 ± 9.9
	one attack per month	76.7 ± 5.1	38.4 ± 9.1	51.9 ± 48.9	49.6 ± 46.7	59.5 ± 10.4	54.5 ± 9.4	47.1 ± 25.2	50.1 ± 7.6
	one attack per 2 months	80.4 ± 10.3	39.7 ± 11.5	39.3 ± 45.9	30.7 ± 43.9	61.2 ± 7.7	58.8 ± 6.2	48.3 ± 25.9	51.9 ± 4.3
	one attacks per 6 months	77.5 ± 12.3	37.6 ± 9.9	35.4 ± 46.5	47.3 ± 48.2	54.9 ± 10.1	55.5 ± 10.1	49.9 ± 29.4	51.9 ± 9.9
	p values	0.493	0.860	0.431	0.572	0.054	0.301	0.646	0.764
Disease severity score	mild	80.4 ± 11.9	41.9 ± 8.3	45.3 ± 50.0	50.6 ± 48.3	59.6 ± 10.4	55.9 ± 10.2	40.8 ± 27.7	50.4 ± 7.1
	moderate	75.7 ± 13.6	38.8 ± 10.3	41.8 ± 46.8	42.0 ± 45.2	57.4 ± 9.4	55.1 ± 9.0	44.3 ± 24.4	50.2 ± 7.7
	severe	69.0 ± 28.6	37.9 ± 8.3	55.0 ± 51.2	41.6 ± 47.2	52.0 ± 6.3	52.0 ± 9.1	50.8 ± 37.3	45.0 ± 14.1
	p values	0.308	0.741	0.902	0.421	0.163	0.702	0.688	0.126

PF: physical function; SF: social function; PRF: physical role function; ERF: emotional role function; MH: mental health; V: vitality; GS: general health. *p < 0.05 significant.
**mean±SD

tionship between clinical features of the disease and the components of quality of life. We have shown that FMF had a negative impact on health-related quality of life.

FMF is characterized by recurrent attacks of fever accompanied by pleurisy and peritonitis. Although rare, pericarditis, orchitis, epididymitis, myositis, and meningitis may also be seen[15]. Besides the known life-extending effect of the agents used in the treatment of FMF, there is no adequate data about the impact of the drugs on quality of life in patients with FMF[16].

The quality of life of FMF patients has first been investigated by Buskila et al[5] in 1997. The authors have concluded that general quality of life of FMF patients was worse than that of healthy individuals. In that study, a quality of life scale, identified by Flanagan, was used and this scale is insufficient to determine the subcomponents of quality of life[17]. Evaluating 80 patients with FMF, Giese et al[11] have also shown that FMF patients exhibited worse quality of life. They assessed the quality of life of the FMF patients by using World Health Organisation Quality of Life scale (WHOQOL-BREF)[18]. However, the WHOQOL-BREF has been reported to be inadequate in assessing the activity of the disease[18,19]. Our results, although we used a different scale to assess quality of life, were similar to these findings as quality of life was found to be significantly decreased in patients with FMF.

Even though so many scales have been specified for assessing quality of life during last 20 years, short form 36 (SF-36) remains as the most commonly used tool to measure helth-related quality of life[20,21]. There is only one study evaluating the quality of life of adult FMF patients by using SF-36. In that study, Deger et al[16] have found that physical function-related components of quality of life were worse in FMF patients (n=90) than in healthy individuals. They also showed that mental function-related components of quality of life were similar in each group. This similarity was proposed to be associated with mood status of the sample[16]. Conversely, in our study, not only the physical function-related components, but also the mental function-related components were found to be impaired in patients with FMF. The discrepancies between the study of Deger at al[16] and the present findings may be due to different sample sizes, the socio-demographic characteristics of patients and healthy volunteers (such as education, marital

status, and level of household income), and the clinical features of patients.

Makay et al[22] have investigated the quality of life of children with FMF by using Pediatric Quality of Life Invantory (PedsQL Inventory) and found that quality of life scores were higher in patients with good colchicine response, but they were lower in those with colchicine non-compliance, myalgia, or arthralgia[22]. Our study supports these findings, showing that colchicine compliance and complete response to colchicine had a positive impact on health-related quality of life in adult FMF patients.

Unexpectedly, we have found no relationship between quality of life to number of attacks and disease severity. Similarly, Giese et al[11] have also detected that there was no significant relationship between disease activity and quality of life in patients with FMF. They have claimed that this may be bacause of measurement tools. On the other hand, it was reported in a study that, quality of life was negatively associated with number of attacks and disease severity[5]. Because we seperated the sample into 4 different groups according to number of attacks in our study, it caused a reduction in the sample size in groups. The insufficient sample size in each group might have effected the results negatively. Patients experiencing attacks more than once a month were shown to have worse heath-related quality of life than those having one attack per 6 months. It was also found that quality of life of patients with mild disease were better than that of those with severe disease, although statistically insignificant. According to the results of the current study, it can be concluded that, there is a relationship between quality of life and number of attacks and severity of the disease.

Conclusions

FMF reduces quality of life both in physical and mental dimensions. This should be taken into account when planning treatment. To improve the health-related quality of life of patients with FMF, psychosocial approaches should accompany medical treatment.

Conflict of interest statement

There is no conflict of interest.

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