Number of Fibromyalgia Tender Points Is Associated with Health Status in Patients with Systemic Lupus Erythematosus

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ABSTRACT. ***Objective.*** To ascertain the association between fibromyalgia (FM) tender points (TP) and health status in patients with systemic lupus erythematosus (SLE).

Methods. We performed a cross-sectional study of 173 SLE patients enrolled in the Hopkins Lupus Cohort. Patients were examined for FM TP and asked to complete the Health Assessment Questionnaire (HAQ) at the same visit.

Results. We found 38.2% of patients had no TP, 44.5% had 1–10 TP, and 17.3% had ≥ 11 TP. No significant association was found between the number of FM TP and age, sex, race, or level of education. The mean score of the HAQ was 1.3 ± 0.4. There were significant associations between FM TP and HAQ (no TP 1.1 ± 0.3, 1–10 TP 1.4 ± 0.4, ≥ 11 TP 1.6 ± 0.6; p = 0.0001).

Conclusion. A strong association between the number of FM TP and health status was found in patients with SLE. The number of TP, and not just the presence/absence of FM, is associated with health status in SLE. (J Rheumatol 2005;32:48–50)

Key Indexing Terms:
SYSTEMIC LUPUS ERYTHEMATOSUS FIBROMYALGIA TENDER POINT
HEALTH STATUS HEALTH ASSESSMENT QUESTIONNAIRE

Fibromyalgia (FM) is a common rheumatological disorder characterized by chronic widespread musculoskeletal pain, stiffness, fatigue, and poor sleep. The pathophysiology of FM is not completely understood[1,2]. The diagnosis of FM is based on chronic widespread pain and 11 or more of the 18 specific tender point (TP) sites[3]. The prevalence of FM ranges between 0.75% and 3% in the general population[4-6].

Health status characterizes both the long- and short-term outcomes of chronic disease. It summarizes outcomes that go beyond the physiologic damage caused by the disease to encompass the consequences of the disease from the perspective of the individual's daily functioning. Evolution of health status as a disease outcome has become an important component of routine clinical care, and health status questionnaires have become a common way to measure and understand the multifaceted aspects of a patient's health and outcome.

Systemic lupus erythematosus (SLE) is a chronic disease with multiorgan involvement and considerable morbidity due to both organ damage and treatment. Thus, there are many factors associated with health status in patients with SLE. FM has been reported to be more common in SLE patients than in the general population, with as many as 25% of SLE patients having 11 or more TP[5,7]. The presence of FM, however, is not related to disease activity or damage in SLE patients[8]. One study showed impairment of health related quality of life among patients with FM and SLE[9]. Our purpose was to define the relationship between health status and the number of FM TP in patients with SLE.

MATERIALS AND METHODS

One hundred seventy-three patients with SLE enrolled in the Hopkins Lupus Cohort, and who met the criteria for SLE as defined by the American College of Rheumatology[10], were examined for FM TP by one trained observer, and asked to complete the Health Assessment Questionnaire (HAQ)[11] at the same visit. Data on disease activity and treatment were obtained at the same visit. Patients were recruited sequentially; all patients gave informed consent to participate.

TP were evaluated by palpation with a force of 4 kg. Eighteen FM TP sites were examined (bilateral occiput, low cervical, trapezius, supraspinatus, second rib, lateral epicondyle, gluteal, greater trochanter, and knee). For a TP to be considered "positive" the patient had to state that the palpation was painful.

The HAQ assesses 8 functional components measuring the ability to perform daily living activities, such as dressing and grooming, arising, eating, walking, hygiene, reaching, gripping, and general activities (e.g., running errands, getting in and out of cars). The use of devices, equipment, and assistance are included in the instruments as a component-weighting factor. Assistance and difficulty in performing activities are graded on a 4 level

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ordinal scale. The 8 components are scored and averaged to produce an index that varies from 0 to 3. The scoring is based on the following scale: without difficulty = 0, with difficulty = 1, with some help from another person or with a device = 2, and unable to do = 3[11].

Data analysis. Statistical analysis was performed with SAS version 6.10. Descriptive statistics were used to characterize the patients. Results are presented as mean, standard deviation (SD), and percentage. Student t test, Pearson's chi-square, and analysis of variance (ANOVA) were used to compare the groups and to explore possible explanations for any difference in scores among the groups.

RESULTS

Baseline characteristics. Demographic characteristics of the patients are shown in Table 1. Most patients were female (94%). No significant difference in age, sex, race, and level of education between groups of patients with and without FM was found.

Number of FM TP. We found that 66 (38.2%) of the patients had no TP, 77 (44.5%) had 1–10 TP, and 30 (17.3%) had 11 or more TP. No significant association between FM TP and age, sex, race, or level of education was found (Table 2). However, there were no men who had 11 or more TP. A finding of 11 or more TP was more common in those who were not high school graduates.

SLE variables. Disease duration was not associated with the HAQ, in models that also included FM TP. There was an association with the physician's estimate of disease activity (a score of 0 to 3 on visual analog scale; p = 0.004), but not with the total SLE Disease Activity Index (SLEDAI) score. There was an association with the arthritis descriptor of the SLEDAI (p = 0.02).

In terms of treatment, there was only a borderline association of the HAQ with prednisone dose (p = 0.058). There was no association with either hydroxychloroquine or use of nonsteroidal antiinflammatory drugs (NSAID).

Health status questionnaire. The mean score of the HAQ was 1.3 ± 0.4. There were significant associations between the HAQ scores and number of FM TP (no TP 1.1 ± 0.3, 1–10 TP 1.4 ± 0.4, ≥ 11 TP 1.6 ± 0.6; p = 0.0001) and race (African American 1.5 ± 0.5, Caucasian 1.2 ± 0.4, other 1.2 ± 0.4; p = 0.0003), but not with sex or level of education (Table 3).

Table 1. Characteristics of all patients and comparison between patients with and without FM.

Characteristic	No. of Patients (%), (N = 173)	Patients without FM (%), (N = 143)	Patients with FM (%), (N = 30)	p**
Age, yrs, mean ± SD	40.8 ± 12.9	41.2 ± 12.9	40.7 ± 12.9	NS
Sex				
Female	163 (94.2)	133 (93)	30 (100)	NS
Male	10 (5.8)	10 (7)	0 (0)	
Race				
African American	78 (45.1)	65 (45.5)	13 (43.3)	NS
Caucasian	86 (49.7)	70 (49)	16 (53.3)	
Other	9 (5.2)	8 (5.5)	1 (3.4)	
Education*				
College or higher	91 (55.5)	77 (55.8)	14 (53.8)	NS
High school	55 (33.5)	49 (35.5)	6 (23.1)	
Less than high school	18 (11)	12 (8.7)	6 (23.1)	

* Education level was unknown in 9 patients. ** Student t test or chi-square test as appropriate.

Table 2. Relationship between FM TP and age, sex, race, and levels of education.

Variable	Proportion (%) with No TP	1–10 TP	≥ 11 TP	p
Age, yrs				
18–34	27/58 (47)	20/58 (34)	11/58 (19)	NS
35–54	31/92 (34)	46/92 (50)	15/92 (16)	
≥ 55	8/23 (35)	11/23 (48)	4/23 (17)	
Sex				
Female	61/163 (37)	72/163 (44)	30/163 (18)	NS
Male	5/10 (50)	5/10 (50)	0/10 (0)	
Race				
African American	27/78 (35)	38/78 (49)	13/78 (17)	NS
Caucasian	35/86 (41)	35/86 (41)	16/86 (19)	
Other	4/9 (44)	4/9 (44)	1/9 (11)	
Education				
College or higher	35/91 (38)	42/91 (46)	14/91 (15)	NS
High school	23/55 (42)	26/55 (47)	6/55 (11)	
Less than high school	7/18 (39)	5/18 (28)	6/18 (33)	

DISCUSSION

Many studies have confirmed that FM is common in patients with SLE[5,7,12]. The prevalence of FM is in the range of 20% in many of these studies. Chronic widespread pain and a minimum of 11 TP are required for the classification criteria for FM[3]. Our results indicate that most (61.8%) of our SLE patients have FM TP, and 17.3% have at least 11 FM TP. These values are similar to a report of at least 6 FM TP in 45%, and at least 11 FM TP in 23% of SLE patients[5]. In a previous study we showed that FM TP are significantly associated with age and level of education, but not with sex, race, and prednisone use[12]. Our current results differ in that no significant association was found between FM TP and age, sex, race, and the level of education.

Health related quality of life is a concept that incorporates mental, social, and physical health and is assessed by questionnaire. The HAQ has been used in studies across the spectrum of rheumatic diseases[13]. Its use in SLE has been validated[14], but no correlation with activity of SLE (by SLEDAI) was seen in a previous study[15]. However, a correlation with global assessment was observed. Our study found that global disease activity and the arthritis descriptor of the SLEDAI were associated with the HAQ, in models that also included FM TP.

FM is a common stressful condition with multidimensional disorders. The impact of FM can be severe. Health status has been reported to be worse in patients with FM than many other chronic conditions, such as rheumatoid arthritis, chronic obstructive pulmonary disease, and malignancy[16-18].

In this study, a strong association of FM TP with HAQ scores was found. FM (11 or more TP, with widespread pain) was also associated with the HAQ. This confirms previous reports of impaired quality of life in lupus patients who had FM[8,9]. The previous studies used the Medical Outcome Study Short Form Health Survey (SF-36), another validated health status measurement, but did not assess number of TP. Thus, the presence or absence of FM or the number of FM TP may be considered to have an important negative impact on health status in patients with SLE. We recognize that TP may represent a measure of distress and bodily complaints[19].

We conclude that patients with SLE having FM TP are likely to have poor health status. FM TP may be useful in the evaluation of health status in SLE.

Table 3. Relationship between clinical characteristics of the patients and the Health Assessment Questionnaire (HAQ).

Variable	HAQ Score, mean ± SD	p*
Sex		
Female	1.3 ± 0.4	NS
Male	1.3 ± 0.5	
Race		
African American	1.5 ± 0.5	0.0003
Caucasian	1.2 ± 0.4	
Other	1.2 ± 0.4	
Education		
College or higher	1.3 ± 0.4	NS
High school	1.3 ± 0.4	
Less than high school	1.4 ± 0.4	
Number of FM TP		
0	1.1 ± 0.3	0.0001
1–10	1.4 ± 0.4	
11 or more	1.6 ± 0.6	

* Calculated using one-way ANOVA; overall association between the variable and HAQ score.

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