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Correlation between demographic and clinical variables and fibromyalgia severity

José Eduardo Martinez*, Pâmela de Melo Casagrande, Paula Pratti Rodrigues Ferreira, Bruno Luigi Giaccio Rossatto

Department of Medicine, Faculdade de Ciências Médicas e da Saúde, Pontifícia Universidade Católica de São Paulo (PUC-SP), São Paulo, SP, Brazil

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ABSTRACT

Introduction: Fibromyalgia (FM) is a rheumatic condition characterized by a picture of generalized chronic pain, hyperalgesia, and allodynia. Symptoms such as fatigue, sleep disorders, morning stiffness, headache, and paresthesia can also be present. It is also associated with other comorbidities, such as depression, anxiety, irritable bowel syndrome, myofascial pain syndrome, and nonspecific urethral syndrome. Few studies have addressed the evolution of FM, especially regarding medium- and long-term evolution, such as why some patients fare better than others, despite being submitted to the same treatment.

Objective: To determine whether there is a correlation between demographic and clinical variables and FM severity.

Material and methods: Sixty women who met the 1990 FM classification criteria of the American College of Rheumatology were divided into three groups, according to the severity established by the Fibromyalgia Impact Questionnaire (FIQ): mild (0 to 50), moderate (50 to 70), and severe (70-100).

Results: Nine demographic and clinical variables were assessed; a significant difference (p < 0.05) was observed only in the groups showing higher FIQ scores with the presence of depression and workers' compensation interests.

Conclusion: The impact of FM measured by the FIQ is directly correlated with the severity of depression and the presence of workers' compensation interests.

Correlação entre variáveis demográficas e clínicas, e a gravidade da fibromialgia

RESUMO

Introdução: A fibromialgia (FM) é uma condição reumatológica que se caracteriza por um quadro de dor crônica generalizada, hiperalgesia e alodinia. Podem estar presentes sintomas como fadiga, distúrbios do sono, rigidez matinal, cefaleia e parestesias. Também está associada a outras comorbidades, como depressão, ansiedade, síndrome do intestino irritável, síndrome miofascial e síndrome uretral inespecífica. Poucos trabalhos têm abordado a evolução da FM, em especial em relação a médio e longo prazo. Por que alguns pacientes se saem melhor do que outros, apesar de serem submetidos ao mesmo tratamento?

* Corresponding author.
   E-mail: jemartinez@terra.com.br (J.E. Martinez).

Objetivo: Determinar se há correlação entre variáveis demográficas e clínicas, e a gravidade da FM.

Material e métodos: Sessenta mulheres que preencheram os critérios de classificação para FM do American College of Rheumatology de 1990 foram divididas em três grupos, de acordo com a gravidade estabelecida pelo Questionário de Impacto da Fibromialgia (FIQ): severa (70-100); moderada (50-70) e leve (0-50).

Resultados: Foram analisadas nove variáveis demográficas e clínicas, sendo observada diferença significativa (P < 0,05) apenas nos grupos de maiores escores do FIQ, com a presença de depressão e interesses trabalhistas.

Conclusão: O impacto da FM medido pelo FIQ se correlaciona diretamente com a intensidade da depressão e a presença de interesses trabalhistas.

Introduction

Fibromyalgia (FM) is a rheumatic condition characterized by chronic generalized pain, hyperalgesia, and allodynia. Symptoms such as fatigue, sleep disorders, morning stiffness, headache, and paresthesia can also be present.[1] It is also associated with other comorbidities, such as depression, anxiety, irritable bowel syndrome, myofascial pain syndrome, and nonspecific urethral syndrome.[2]

This syndrome has an etiology and pathogenesis that are yet to be fully clarified, and the basis of its physiopathology is the amplification of painful stimulus transmission, altering the perception of pain.[1,3] Although few Brazilian epidemiological studies have been published, its prevalence is estimated at around 2.5% in the adult Brazilian population. The vast majority of patients are female and aged between 35 and 44 years.[2,4]

The negative impact of FM on quality of life has been well established by qualitative and quantitative studies.[5,6] This impact is global and involves personal issues such as difficulty to perform professional or everyday tasks, uncertainty regarding personal performance, and reduced quality of work, with consequent effects on work, family and social life, and even family income.[7]

The treatment should be multidisciplinary, with a drug and non-drug therapy combination tailored to each patient's needs.[1]

Few studies have addressed the evolution of FM, especially regarding medium and long-term evolution. The literature reports symptom stability over time.[8,9] The possible causes of this stability can be found in the syndrome itself or in the ineffectiveness of the recommended therapeutic measures to date.[10]

Although the musculoskeletal complaint is the most prevalent, the non-evolution to deformities leads to the conclusion that the disability is due to pain and fatigue.[11] Since the therapy is ineffective in the long-term control of symptoms, the stability in the degree of disability is somewhat expected. It is noteworthy that, despite treatment failure, most patients remain in treatment, focusing on improving quality of life.[10]

Why do some patients evolve better than others, despite being submitted to the same treatment? Why is symptom intensity and its impact on daily life so variable? Which aspects influence this diversity? These questions have not been fully answered yet. The aim of this study was to determine whether there is a correlation between demographic and clinical variables and FM severity, when measured by its impact on quality of life using the Fibromyalgia Impact Questionnaire (FIQ).

The aim of this study was to determine whether there is a correlation between demographic and clinical variables and the impact of FM.

Material and methods

Drawing

This was an epidemiological, descriptive, and cross-sectional study of patients from the outpatient rheumatology clinic of the Conjunto Hospitalar de Sorocaba (CHS), Sorocaba, Brazil.

Casuistry

The sample consisted of female patients who met the 1990 fibromyalgia classification criteria of the American College of Rheumatology (ACR) and were treated in outpatient rheumatology clinic of the CHS.

Data collection tools and variables

Data were obtained from the patients' files and through interviews conducted during the application of the assessment tools for the following variables:

1 – duration of the disease (symptom onset);
2 – age at onset;
4 – family income;
7 – previous diagnosis of depression;
8 – presence of workers' compensation interests (sick leave, retirement, accident at work, labor claims);
11 – clinical concomitant diseases;
12 – osteoarticular concomitant diseases;
13 – impact on quality of life measured by the FIQ;
14 – pain intensity measured by the visual analog scale (VAS);
15 – severity of depression assessed by the Beck Depression Inventory (BDI).

16 - intensity of anxiety perception.

Demographic and clinical data were obtained using a specific questionnaire. The intensity of pain, anxiety, and other symptoms were measured by the numeric analog scale. This scale ranges from 0 to 10 – where0 indicates absence of the symptom and 10 represents the maximum possible intensity.

Depression was assessed by the BDI. This scale consists of 21 self-administered, multiple-choice questions, which can determine the degree of depression. It comprises questions regarding the patients' perception of their state of joy or sorrow, failure and guilt, and questions about their decision-making abilities, interest in people, health concerns, and sexual drive.

The presence of workers' compensation interests was defined as receiving sick leave from the Brazilian Institute of Social Security or tetirement due to disability.

The impact on quality of life was measured by the FIQ questionnaire, consisting of ten items that assess the impact of FM on functional capacity and professional activities, and that quantifies the main symptoms. The FIQ has a score ranging from 0 to 100, with 0 corresponding to no impact and 100 to maximum impact.

Patients were divided into three groups, according to the FIQ total score:

Group A – 0 to 50 (mild impact);
Group – 50 to 70 (moderate impact);
Group C – 70 to 100 (severe impact).

Demographic and clinical data were described as mean and standard deviation, or as number and percentage of presence of the studied variable. Association tests (chi-squared or Fisher's exact test) were performed between the different variables studied and subgroups, as well as tests (Student's t-test, analysis of variance [ANOVA]) to compare between the different quantitative variables studied and the subgroups.

Results

Table 1 presents the demographic data. No difference was observed among the three groups for any of the studied variables. There was a statistically significant difference in the isolated comparison of groups A and B regarding the presence of workers' compensation interests.

Table 2 shows the comparisons among the groups regarding the clinical variables. A significant difference was observed only for the presence of depressive symptoms in the groups with greater impact on quality of life.

Discussion

The analysis of demographic data disclosed no statistically significant difference among the groups, and demonstrated that they were matched for age, symptom onset, family income, education, and presence of workers' compensation interests, among others.

A significant difference was observed regarding the presence of workers' compensation interests when comparing the groups with greater impact with the group with mild impact. This result was somehow expected, since cessation of work implies a greater impact of the disease.

The patients had a mean age of 48.6 years. The mean age of symptom onset was 36 years. This finding is higher than those observed in other studies.[12,13] The service where this study was conducted is tertiary and has a series that cannot be generalized to the entire population of fibromyalgia patients. The mean age of onset was compatible with other studies, in which this variable ranged between 12 and 55 years.[14]

Regarding family income, the patients had a mean of 1.4 Brazilian minimum wages - slightly below the value described by Costa et al.,[15] i.e., between 1.5 and 2.0 Brazilian minimum wages. The level of education in the present sample was similar to that in the studies by Berber et al.[13] and Martins et al.[16]

Table 1 – Comparação entre os grupos em relação às variáveis demográficas.

Variable/Group	(A)	(B)	(C)	P
Age (mean, SD)	49.7 (7.7)	49.6 (7.7)	46.7 (10.2)	0.47
Age at onset (mean, SD)	36.9 (11.5)	35.4 (14.6)	35.8 (11.1)	0.93
Family income[a]	1,807.63 (1,233.65)	1,336.85 (993.55)	1,175.79 (1,004.58)	0.18
Schooling (n, %)				
Group I	13 (23.6)	9 (16.4)	13 (23.6)	0.42[b]
Group II	4 (7.3)	8 (14.6)	2 (3.6)	
Group III	1 (1.8)	2 (3.6)	1 (1.8)	
Group IV	1 (1.8)	0 (0.0)	1 (1.8)	
Workers' compensation interests (n, %)				
Yes	6 (11.8)	11 (21.6)	11 (21.6)	0.07

SD, standard deviation; n, number.
[a]Mean family income (Brazilian reais).
[b]P-value estimation calculated by Monte Carlo simulation.

Table 2 – Comparison among the groups regarding clinical variables.

Variable/Group	(A)	(B)	(C)	P
Duration (mean and SD)	10.7 (8.1)	7.9 (6.2)	13.3 (10.1)	0.13
Interval between symptom onset and diagnosis (mean and SD)	5.7 (7.4)	5.8 (7.4)	4.9 (5.6)	0.91
Intensity of pain (mean and SD)	8.1 (2.1)	8.4 (1.7)	9.2 (1.2)	0.13
Depression index (mean and SD)	14.6 (7.0)[a]	26.4 (12.6)[b]	28.7 (13.1)[b]	< 0.001
Presence of other clinical diseases (n, %)				
Yes	12 (20.3)	19 (32.2)	12 (20.3)	0.08
Presence of other rheumatic diseases (n,%)				
Yes	15 (25.4)	12 (20.3)	11 (18.6)	0.27
Duration of treatment (years, SD)	5.8 (7.1)	4.6 (3.5)	5.9 (4.1)	0.68
Previous diagnosis of depression (n, %)				
Yes	8 (14.3)	15 (26.8)	13 (23.2)	0.10

SD, standard deviation; n, number.

The analysis of clinical variables demonstrated a mean duration of disease of 126 months, higher than the mean found in another study by the authors, conducted in 2006.[14] The time to diagnosis was 65 months (> 5 years) in the present study study. This interval was higher than that reported by Berber et al.[13] and Martins et al.,[16] who showed a time interval < 2 years. Regarding the intensity of pain, the patients studied had a mean of 8.5, slightly higher than that reported in literature.[17]

The most significant finding was the association between the intensity of depressive symptoms and FM impact. The hypothesis that patients with emotional disorders would constitute a subgroup with greater severity has already been presented in the medical literature. Santos et al.[18] concluded that a group of FM patients had worse quality of life and higher levels of depression when compared with a control group, suggesting an association between FM and depression, and that this could be regarded as a secondary symptom of the syndrome.

Giesecke et al. proposed the distribution of fibromyalgia patients into subgroups based on pain sensitivity and various emotional factors that included affective disorders. According to the authors, the groups with increased pain sensitivity and poor self-control over their symptoms included patients with higher levels of mood disorders.[19] The current study supported the hypothesis that the presence of depression is a more important factor that the other variables. Other authors have associated higher pain intensity with the presence of depression.[20]

The presence of other diseases associated with FM did not reach statistical significance, although they were present in all three groups (64.3% to 72.8%). Ribeiro et al.[21] found a high prevalence of active comorbidities associated with FM (4.05 per patient).

Therefore, it is concluded that the level of depression and presence of workers' compensation interests are correlated with the impact of FM, and may be prognostic factors.

Conflicts of interest

The authors declare no have conflicts of interest.

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