

# Correlação entre a contagem dos pontos dolorosos na fibromialgia com a intensidade dos sintomas e seu impacto na qualidade de vida

## *Correlation between the number of tender points in fibromyalgia, the intensity of symptoms and its impact on quality of life*

José Eduardo Martinez<sup>(1)</sup>, Renato Massashi Fujisawa<sup>(2)</sup>,  
Thiago Caldi de Carvalho<sup>(3)</sup>, Reinaldo José Gianini<sup>(4)</sup>

### RESUMO

**Objetivo:** Estabelecer se há correlação entre o número de pontos dolorosos e a intensidade da percepção de aspectos centrais da síndrome (dor, fadiga, ansiedade, depressão) e do seu impacto na capacidade funcional. **Material e Métodos:** Avaliaram-se quarenta e um prontuários de pacientes que preenchem os Critérios de Classificação para Fibromialgia do Colégio Americano de Reumatologia, considerando as seguintes variáveis: percepção da intensidade de dor, fadiga, qualidade de vida global, depressão, ansiedade e contagem de pontos dolorosos. A avaliação da capacidade funcional foi realizada através do Questionário de Avaliação de Saúde simplificado (*Health Assessment Questionnaire-HAQ*). **Resultados:** Observou-se correlação entre a contagem de pontos dolorosos e a intensidade da dor e a capacidade funcional. Não houve correlação com as notas atribuídas à fadiga ( $p = 0,358$ ), ansiedade ( $p = 0,58$ ), depressão ( $p = 0,50$ ) e qualidade de vida ( $p = 0,538$ ). A correlação entre o número de pontos dolorosos e a intensidade da dor foi mais forte que com o HAQ. **Conclusão:** Há correlação entre contagem dos pontos dolorosos e intensidade da dor e capacidade funcional. A correlação entre os pontos dolorosos e a intensidade da dor é mais importante do que com a capacidade funcional medida pelo HAQ. Não há correlação com as demais variáveis estudadas.

**Palavras-chave:** fibromialgia, dor, pontos dolorosos, capacidade funcional, estresse.

### ABSTRACT

**Objective:** to study the correlation between the number of tender points and the intensity of the perception of key aspects of the fibromyalgia syndrome (pain, fatigue, anxiety, depression, and its impact in functional capacity). **Material and Methods:** forty-one records of patients who meet the Criteria for Classification of Fibromyalgia of the American College of Rheumatology were reviewed, focusing on the following variables: perception of the intensity of pain, fatigue, quality of sleep, depression, anxiety and the tender point count. The assessment of functional capacity was done by the Health Assessment Questionnaire (HAQ). **Results:** There was a positive correlation between tender point count and pain intensity ( $p = 0.004$ ), as well as HAQ scores ( $p = 0.0011$ ). There was no correlation between tender point count and fatigue ( $p = 0.358$ ), anxiety ( $p = 0.58$ ), depression ( $p = 0.50$ ) or physical capacity ( $p = 0.538$ ). The correlation between the tender points count and pain intensity is stronger than with HAQ. **Conclusion:** there is a positive correlation between the tender point count, intensity of pain and functional capacity. The correlation between the tender point count and intensity of pain is more important than with functional capacity measured by the HAQ. There was no correlation with the other variables studied.

**Keywords:** fibromyalgia, pain, tender points, physical capacity, anxiety.

Recebido em (**Received on**) 19/03/2008. Aprovado (**Approved**), após revisão, em 17/07/08. Declaramos a inexistência de conflitos de interesse (**We declare no conflict of interest**).

Trabalho desenvolvido na Pontifícia Universidade Católica de São Paulo - Conjunto Hospitalar de Sorocaba.  
Study developed at Pontifícia Universidade Católica de São Paulo - Conjunto Hospitalar de Sorocaba

1. Professor Titular do Departamento de Medicina.

1. Full Professor; Department of Internal Medicine.

2. Acadêmico de Medicina.

2. Lecturer of Medicine.

3. Acadêmico de Medicina.

3. Lecturer of Medicine.

4. Professor Titular do Departamento de Medicina.

4. Full Professor; Department of Internal Medicine.

Endereço para correspondência (**Correspondence to**): Praça José Ermirio de Moraes, 290 - Sorocaba, SP - Brasil, CEP (**Zip Code**): 18035-095

contagem de pontos dolorosos. A complexidade da FM não consegue ser capturada apenas pela presença da dor e dos pontos dolorosos.<sup>19</sup> Por outro lado, Harth & Nielson consideram que sugestões no sentido de ignorar ou abandonar a contagem de pontos dolorosos seria retornar a um estado de confusão anterior ao estabelecimento dos critérios do ACR.<sup>20</sup>

Considerando-se que uma das teorias fisiopatológicas mais aceitas atualmente é que a FM seria resultado de alterações neurobiológicas que levariam a amplificação da transmissão do estímulo doloroso; levando-se também em conta que a resposta alterada ao estresse está possivelmente vinculada ao surgimento dessas alterações,<sup>2</sup> concordamos que, a partir da opinião de Wolfe, a contagem dos pontos dolorosos poderia ser uma medida desse estresse alterado, entenderemos que esse procedimento poderia, no mínimo, ser útil para o acompanhamento clínico.<sup>8</sup>

O propósito deste estudo foi verificar se há uma correlação entre a contagem de pontos dolorosos e a intensidade das demais características clínicas dessa síndrome. Ou seja, se não há discrepância dessa variável e os demais sintomas. Observamos correlação significativa entre o número de pontos dolorosos e a intensidade da dor e o impacto na qualidade funcional medida pelo HAQ. Não houve correlação com as intensidades da fadiga, depressão, ansiedade ou qualidade de vida percebidas. Curiosamente, a correlação significativa foi observada nas variáveis dor e capacidade funcional, que são consideradas aspectos do componente físico da síndrome, e não nas variáveis relacionadas ao emocional. Assim, isso vai contra a ideia de que através dos pontos dolorosos estaríamos medindo questões relacionadas ao estresse. Podemos, porém, considerar que as escalas analógicas visuais talvez não sejam métodos apropriados para medir depressão, ansiedade e qualidade de vida, que são conceitos com uma complexidade que não pode ser obtida com esse tipo de avaliação. Deve-se, porém, ter em mente que esse estudo é baseado em coleta de dados de prontuário, através de ficha padronizada, normalmente utilizada para atendimento dos pacientes. Assim, os dados são relacionados ao cenário clínico e não experimental. Dessa forma é que esses resultados devem ser interpretados. Estudos complementares com instrumentos validados para avaliar especificamente as variáveis aqui estudadas podem reforçar ou colocar em discussão os dados apresentados.

As correlações observadas nos indicam que esse método de avaliação pode ser útil para compor a observação clínica na fibromialgia complementarmente aos outros parâmetros de avaliação. Sua utilização no acompanhamento pode acrescentar aos dados da anamnese informações sobre a sensibilidade dolorosa e o impacto funcional. Seu papel no diagnóstico ainda

está por ser definido, já que o limite estabelecido pelos critérios do ACR ainda é motivo de controvérsia.

Deve-se, ainda, ressaltar que a amostra estudada representa uma população de renda e escolaridade baixas que é atendida em um hospital público do interior de São Paulo. Sabe-se que as questões sociais podem influenciar a dor crônica e assim os resultados aqui obtidos talvez não possam ser generalizados.

Conclui-se, portanto, que há correlação entre a contagem dos pontos dolorosos e a intensidade da dor e a capacidade funcional. A correlação entre os pontos dolorosos e a intensidade da dor é mais importante do que com a capacidade funcional medida pelo HAQ. Não há correlação com as demais variáveis estudadas.

---

## *Correlation between the number of tender points in fibromyalgia and the intensity of symptoms and its impact on life quality*

---

### INTRODUCTION

Fibromyalgia (FM) is defined as a painful syndrome affecting especially women, characterized by diffuse muscular pain and tender points to finger pressure.<sup>1</sup>

The most accepted physiopathologic theory nowadays considers it as a syndrome of painful amplification with changes in nociception processing at the Central Nervous System (CNS) level. It is also related to an abnormal response to stressors, suggested by changes in hypothalamic pituitary adrenal axis.<sup>2</sup> Therefore FM can be considered an altered response to stress. Symptoms include diffuse skeletal muscle pain, sleep disorders, fatigue, short-term morning stiffness, edema sensation and paresthesias. Association with other functional syndromes like depression, anxiety, headaches and irritable bowel syndrome is constant. These symptoms may vary their intensity according to some conditions, called modulation factors; the following factors have been mentioned more frequently in medical literature: climate changes, physical activity level and emotional stress.<sup>3,4,5</sup>

Physical examination is unremarkable except for pain evoked by digital palpation in specific and limited muscular areas. The number of regions to be researched ranges from 12 to 24 areas, according to different authors.<sup>3,4,5</sup> The Multicentre

Committee for Classification of Fibromyalgia of the American College of Rheumatology (ACR) standardized the research of 18 areas, called tender points.<sup>6</sup>

Fibromyalgia may be isolated or related to other disorders, such as hypothyroidism, systemic lupus erythematosus and rheumatoid arthritis.

An important aspect of this syndrome is the impact on the patients and their families quality of life. The main determinants of such impact are symptoms of pain and fatigue and the resulting functional disability.<sup>7</sup>

In 1990, the ACR established a Criteria for Classification in order to standardize the inclusion criteria in scientific trials, but have also been used to guide individual diagnosis. The criteria includes diffuse muscle skeletal pain involving sites above and below the waist, spine and limbs for over three months in addition to tender points previously mentioned.

When used for diagnosis purposes, these criteria cause a great number of false negative and positive, and there was questioning about its validity in international literature.<sup>8</sup> The number of tender points should be carefully analyzed; some authors link total number of such points to stress and no to FM severity.<sup>8</sup>

In clinical practice, it is fundamental to value the presence of other symptoms and to individually consider tender points, both related to number and distribution. However, this issue has not been completely solved. The purpose of this study was to establish a correlation between the number of tender points and the intensity of the perception of key aspects of the fibromyalgia syndrome (pain, fatigue, anxiety, depression) and its impact on functional capacity.

---

## MATERIAL AND METHODS

This is a cross-sectional study with data from medical records of patients attended at the rheumatology clinic of the Sorocaba Hospital Complex. Forty one records of patients who meet the Criteria for Classification of Fibromyalgia of the ACR were reviewed. Patients should have been under a stable drug treatment regimen for the past 60 days.

The following variables were assessed: perception of the intensity of pain, fatigue, quality of life, depression, anxiety and the number of tender points using Visual Analogical Scales (VAS). These scales range from 0 to 10, where 0 means absence and 10 the highest possible intensity. Examination for tender points were done by rheumatologists. These data are part of routine clinical care in our clinic for fibromyalgia patients.

The assessment of functional capacity was done by the Health Assessment Questionnaire (HAQ). This questionnaire

is made of questions about daily activities, general impact, occupational impact and symptom intensity. Its score range from 0 to 3, where 0 means the lack of disability, and 3 severe disability. This questionnaire is also applied routinely in our clinic.

Statistic analysis used parametric and non-parametric statistic methods to establish data correlation. In the beginning, data distribution of tender point number was tested and observed that it is not a parametric variable. In this case, a non parametric correlation/regression test was used (Least Absolute Value). Significance value  $p < 0.05$  was considered.

Project was submitted to approval by Committee of Ethics in Research, of CCMB PUC-SP.

---

## RESULTS

The study population was formed by women, mainly between 40-60 years old (70.62%), average age 46 years old, with 42 years old as minimum age and 58 years old as maximum, average time from diagnosis was 49 months. Most of them were married (78.04%) and with incomplete elementary school (55.65%); 34,14% had a professional activity and 24.39% were on a sick leave. Family income, of 48.78% was between 1 and 3 minimum wages.

Considering clinical features such as perception of pain intensity, anxiety and depression we have found moderate to high values at VAS scales; average VAS for this variables was respectively 7.14, 7.43 and 6.87. Average score of functional capacity measured by HAQ was 0.34, that is mild disability.

Significant correlation between tender point count was obtained only for pain ( $p = 0.004$ ) and HAQ ( $p = 0.0011$ ). There was no correlation with fatigue ( $p = 0,358$ ), anxiety ( $p = 0.58$ ), depression ( $p = 0.50$ ) and quality of life ( $p = 0.538$ ).

A multiple regression test was done for correlations between variables showing statistic significance in order to establish the degree of this significance. Significance value obtained for pain intensity was  $p = 0,044$  and HAQ,  $p = 0,25$ . It is observed that the correlation between the number of tender points and the pain intensity is stronger than with HAQ.

---

## DISCUSSION

Scientific knowledge on FM development is still under controversy. Consideration of FM as a single disease has been questioned. The possibility of fibromyalgia being part of a clinic condition spectrum of functional nature related to an altered stressor response is one of the most accepted hypothesis in literature.<sup>8</sup>

One cannot argue that a large number of people suffer from diffuse skeletal muscle pain with large extension and intensity, together with painful hypersensitiveness to muscle palpation. This clinical picture is frequently accompanied by other symptoms, such as fatigue, sleep disorder, headache, anxiety and depression, irritable bowel syndrome, and others of functional nature.<sup>3,10,11,12</sup> Incomplete knowledge of its physiopathology does not make it absent as a clinical entity. The definition as a syndrome and the establishment of a name to identify it allowed the production of a large volume of knowledge, and henceforth, the use of new treatment approaches, including medication and lifestyle modifications, that could alleviate the suffering of a significant portion of patients. Identifying fibromyalgia presence associated with other diseases with chronic pain makes therapeutic planning more efficient to relief symptoms, including from associated disease.

ACR, by means of an especially created Committee, listed a group of criteria to standardize this syndrome diagnosis in order to be used in clinical trials. Only diffuse pain and tender point count had been included; the other symptoms<sup>14</sup> had not been considered. From a scientific point of view, not considering these issues may be correct, since the statistic relevance level requirement was not met, but in clinical practice, assessment of other symptoms is fundamental to establish diagnosis hypothesis of FM.

Thus, a controversy has been established in literature about the role of the number of tender points in clinical practice. Does it add value to the diagnosis when considering the presence of diffuse pain? Should it be used as a follow-up method?

Several authors, in epidemiological studies, concluded that tender point number could not define a distinguishing disease (FM), but only a measure of altered response to stress.<sup>15,16,17</sup> Wolfe called tender point number of "erythrocyte sedimentation rate of altered stress".<sup>8</sup> Some highly FM prevalent symptoms are included in the stress altered response, such as fatigue, depressive humor and sleep disorder.<sup>15</sup> Thus it should not be useful for specific FM diagnosis, but should be assessed in other clinical conditions with an important psychological component.

One of the imposed issues is the arbitrariness established by ACR of the number 11 as the limit for a certain patient being considered or not to have fibromyalgia. Some authors discuss reasons to remove, from FM diagnosis, patients with a similar case history only because they do not reach the limit number.<sup>18,19</sup> Our study did not assessed this matter, although we agree that new studies would be important on assessing the value of tender points, as well as other symptoms role in the syndrome diagnosis; then, new limits for the use of tender point

number should be tested. FM complexity cannot be assessed only by the presence of pain and tender points.<sup>19</sup> On the other hand, Harth & Nielson consider that suggestions in order to ignore or abandon tender point count could lead to a uncertainty status similar to the one prior to ACR criteria.<sup>20</sup>

One of the most accepted physiopathologic theories today is that FM can result from neurobiological changes leading to amplification of painful stimulus transmission and that altered stress response is possibly linked to such changes.<sup>2</sup> Then, even if we agree with Wolfe's opinion that the number of tender points could be a measure of this altered stress response, we understand that this procedure could, at least, be useful for clinical follow-up.<sup>8</sup>

The purpose of this study was to verify the correlation among the number of tender points and the intensity of other clinical features of this syndrome. That is, if there is no discrepancy between this variable and other symptoms. A significant correlation was observed among the number of tender points and pain intensity, and the impact on functional capacity measured by HAQ. There was no correlation with the intensity of fatigue, quality of life, depression and anxiety. Curiously, significant correlation was observed in pain and functional capacity variables, which are considered aspects of physical components of the syndrome and not related to emotional components, in contrast to the idea that examining tender points, we would be measuring stress-related issues. However, we can consider that the visual analogue scales may not be an appropriate method for measuring depression, anxiety and quality of life, which are too complex for this type of assessment. We should keep in mind that this study has been based on data collection from medical records, using a standardized form generally used to attend patients in our practice. The results should be interpreted as related to clinical setting and not experimental setting. Additional studies with valid instruments to assess the variables studied here may reinforce or discuss the data presented.

The observed correlations indicate that the tender point count can be useful in fibromyalgia when combined to other assessment parameters. Its use in follow-up may add to the anamnesis some information on painful sensitiveness and functional impact. Its role in diagnosis has not been defined yet, as the limit established by ACR criteria is still controversial.

It is also emphasized that the sample studied represents a population of low income that, attended to a public hospital in the countryside of the state of São Paulo. Social issues are known to influence chronic pain, so results here may not be generalized.

In summary, there is a positive correlation among the number of tender points and pain intensity and functional

capacity. The correlation between the number of tender points and pain intensity is stronger than functional capacity measured by HAQ. There was no correlation with the other variables studied.

## REFERÊNCIAS BIBLIOGRÁFICAS

### REFERENCES

1. Goldenberg DL. Fibromyalgia syndrome: an emerging but controversial condition. *JAMA* 1997;257:2782-7.
2. Staud R. Fibromyalgia Pain: do we know the source? *Current Opinion Rheumatol.* 2004;16:157-63.
3. Yunus MB, Masi AT, Calabro JJ, Miller KA, Feingenbaum SL. Primary fibromyalgia (fibrositis): clinical study of 50 patients with matched normal controls. *Semin Arthritis Rheum* 1981;11:151-71.
4. Clarke S, Campbell SM, Forehand ME, Tindall EA & Bennett RM. Clinical characteristics of fibrositis. *Arthritis Rheum* 1985;28:132-3.
5. Martinez JE, Atra E, Ferraz MB & Silva PSB. Fibromyalgia: aspectos clínicos e sócioeconômicos. *Rev Bras Reumatol* 1992;32(5):225-30.
6. Multicenter Criteria Committee. The American College of Rheumatology 1990 Criteria for Classification of Fibromyalgia. *Arthritis Rheum* 1990;33:169-72.
7. Martinez JE, Ferraz MB; Sato EI & Atra E. Fibromyalgia vs Rheumatoid arthritis: a longitudinal comparison of quality of life. *J Rheumatol* 1995;22:201-4.
8. Wolfe F. The relation between tender points and fibromyalgia symptom variables: evidence that fibromyalgia is not a discrete disorder in the clinic. *Annals Rheumatic Dis* 1997;56:268-71.
9. Pereira CAB. Validação da versão brasileira do Fibromyalgia Impact Questionnaire (FIQ). *Rev Bras Reumatol* 2006;46:24-32.
10. Inanici F, Yunus MB. History of fibromyalgia: past to present. *Curr Pain Headache Rep* 2004;8(5):369-78.
11. Smythe HA, Moldofsky H. Two contributions to understanding of the "fibrositis" syndrome. *Bull Rheum Dis* 1977-8;28(1):928-31.
12. Campbell SM, Clark S, Tindall EA, Forehand ME, Bennett RM. Clinical characteristics of fibrositis. I. A "blinded," controlled study of symptoms and tender points. *Arthritis Rheum* 1983;26:817-24.
13. Gill JM, Quisel A. Fibromyalgia and Diffuse Pain. *Clinics in Family Practice* 2005;2:181-90.
14. Wolfe F, Smythe HA, Yunus MB, Bennett RM, Bombardier C, Goldenberg DL, et al. The American College of Rheumatology 1990 criteria for the classification of fibromyalgia. Report of the Multicenter Criteria Committee. *Arthritis Rheum* 1990;33:160-72.
15. Croft P, Schollum J, Silman A. Population study of tender point counts and pain as evidence of fibromyalgia. *BMJ* 1994;309:696-9.
16. Lindell L, Bergman S, Petersson IF, Jacobsson LT, Herrstrom P. Prevalence of fibromyalgia and chronic widespread pain. *Scand J Prim Health Care* 2000;18:149-53.
17. Schochat T, Raspe H. Elements of fibromyalgia in an open population. *Rheumatology Oxford* 2003;42:829-35.
18. Schochat T, Croft P, Raspe H. The epidemiology of fibromyalgia. Workshop of the Standing Committee on Epidemiology, European League Against Rheumatism (EULAR), Bad Sackingen, 19-21 November 1992. *Br J Rheumatol* 1994;33:783-6.
19. Clauw DJ, Crofford LJ. Chronic widespread pain and fibromyalgia: what we know, and what we need to know. *Best Pract Res Clin Rheumatol* 2003;17:685-701.
20. Harth M, Nielson WR. The fibromyalgia tender points: use them or lose them? A brief review of the controversy. *J Rheumatol* 2007;35:915-21.