Effect of the Coexistence of Fibromyalgia in the DAS28 Index in Women With Rheumatoid Arthritis

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Objective: To compare the effect of coexisting fibromyalgia in DAS28 in RA female patients.
Patients and method: Fifty-three RA women seen consecutively in an outpatient rheumatology clinic were included and classified according to the presence (9 women) or absence (44 women) of fibromyalgia. ESR, number of tender and swollen joints, and global assessment by the patient through a visual analogue scale were recorded, as well as other functional and emotional variables.
Results: There were no differences in age, time since onset of the arthritis, number of swollen joints, ESR, and CRP. Number of tender joints, global assessment by the patient, and functional and emotional aspects were worse in patients with fibromyalgia. DAS28 was higher when fibromyalgia was associated to RA (5.55 [0.78] vs 3.39 [1.15]; *P*=.000).
Conclusions: Coexistence of fibromyalgia increases DAS28 in women with RA.

Key words: Rheumatoid arthritis. Fibromyalgia. Disease Activity Score. DAS28.

Efecto de la coexistencia de fibromialgia en el índice DAS28 en mujeres con artritis reumatoide

Objetivo: Evaluar el efecto de la coexistencia de fibromialgia y artritis reumatoide en el valor del índice DAS28 en mujeres.
Pacientes y método: Se incluyó a 53 mujeres con artritis reumatoide (9 con fibromialgia y 44 sin fibromialgia) visitadas de forma consecutiva en una consulta extrahospitalaria de reumatología. Se recogieron la velocidad de sedimentación globular (VSG), la PCR, el número de articulaciones dolorosas y tumefactas, la valoración general de las pacientes mediante escala visual analógica y otros parámetros referentes a la enfermedad articular y el estado funcional y emocional de las pacientes.
Resultados: No se encontraron diferencias significativas en la edad de las pacientes, la duración de la artritis, el número de articulaciones tumefactas, la VSG y la PCR; por el contrario, hubo diferencias en el número de articulaciones dolorosas, la evaluación global de la enfermedad por las pacientes y en aspectos funcionales y emocionales. El DAS28 fue mayor en las mujeres que tenían fibromialgia asociada (5,55 ± 0,78 frente a 3,39 ± 1,15; p = 0,000).
Conclusiones: La coexistencia de fibromialgia en mujeres con artritis reumatoide se asocia a un mayor valor del DAS28.

Palabras clave: Artritis reumatoide. Fibromialgia. *Disease Activity Score.* DAS28.

Introduction

Rheumatoid arthritis (RA) is a polyarticular inflammatory disease associated to fibromyalgia with a greater frequency than that seen in the general population. The estimated prevalence of fibromyalgia in RA has been set, for many years, at 12%-20%,[1] something that has been confirmed in later studies.[2,3] Patients with fibromyalgia have chronic, generalized pain, fatigue, and sleep abnormalities that affect their perception of joint pain and their general well being. Because these 2 characteristics are part of the DAS28 index, it is hypothesized that this index could overestimate the activity of RA when the patient also has fibromyalgia. The objective of the present study was to compare DAS28 in women with RA and who had or did not have associated fibromyalgia.

Patients and Method

This was a transversal study of women with RA (ACR criteria)[4] visited consecutively between September and December 2006 in a rheumatology outpatient clinic. Women were classified into 2 groups on whether or not

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Characteristics and Comparative Study of Patients With Rheumatoid Arthritis With or Without Fibromyalgia[a]

	Without Fibromyalgia	With Fibromyalgia	*P*
Patients, n (%)	44 (83)	9 (17)	
Age	60.8 (15.1) (29-92)	64.0 (14.4) (51-77)	.644
Time since onset	3.6 (3.5) (0-11)	4.8 (4.5) (0-12)	.448
Pain intensity	4.26 (2.75) (0-10)	6.83 (1.25) (4-8)	.006
Anxiety intensity	4.96 (2.93) (0-10)	7.22 (1.84) (5-10)	.035
Mood	4.48 (2.82) (0-8)	6.89 (3.17) (0-10)	.015
Functionality	4.35 (3.19) (0-10)	7.72 (1.00) (6-9)	.002
VAS	39.7 (26.6) (0-100)	56.2 (21.0) (15-87)	.048
ESR	28.1 (16.1) (4-72)	30.8 (17.3) (10-69)	.484
PCR	1.38 (3.10) (0.3-15.2)	0.66 (0.42) (0.3-1.6)	.725
HAQm	0.46 (0.48) (0-1.6)	1.44 (0.43) (9-2.1)	.000
TJ28	2.3 (5.1) (0-25)	17.4 (9.5) (5-28)	.000
SJ 28	0.8 (1.8) (0-8)	1.1 (1.4) (0-4)	.129
DAS28	3.39 (1.15) (1.78-6.85)	5.55 (0.78) (4.43-6.99)	.000

[a]CAS indicates visual analog scale of disease by the patient; EST, erythrocyte sedimentation rate; TJ, number of tender joints; SJ, number of swollen joints. Data presented as mean (standard deviation) (interval), except where indicated.

they complied with the ACR criteria fibromyalgia[5] at the time of their visit. To that effect, the main researcher (DRV) evaluated, through an interview and physical examination, the criteria for fibromyalgia in all of the patients diagnosed with RA who complied with the ACR criteria for this inflammatory disease, independent of whether they had been diagnosed or not beforehand with fibromyalgia. The protocol included a tender point count, tender joints (TJ), and the swollen joints (SJ), the erythrocyte sedimentation rate (ESR) in the analysis performed for their visit, and the general health evaluation through a visual analog scale (VAS). Examination was first carried out on the joints to determine TJ and SJ and then over the tender points for fibromyalgia, first on the arms and then on the legs. With this data the sample was divided in 2 groups, according to their complying with fibromyalgia criteria or not and DAS28 was calculated, it being the main study variable. Other data gathered was: age, time since onset of RA, CRP, modified HAQ. and treatment prescribed for RA at the end of the visit. In a scale of 0 to 10 (0 = the most positive situation, 10 = the worst), anxiety, mood, perception of pain, and functional capacity were evaluated. The surveys were carried out or supervised by a trained nurse (CHO). A descriptive analysis of both groups was done and a comparison of the groups was carried out using the χ^2 test for qualitative variables and a non-parametric comparison for quantitative variables.

Results

Sixty-five women were recruited, 12 of them with criteria for fibromyalgia at the moment of evaluation. One of the patients diagnosed with fibromyalgia at the moment of evaluation had not presented the diagnosis in previous visits, while 1 of the patients with the diagnosis of fibromyalgia did not comply with the criteria at the moment of evaluation and was included in the group without fibromyalgia. This last patient did not receive treatment for fibromyalgia (antidepressants, muscle relaxants, simple analgesics, or opiates), with the exception of antiinflammatories for arthritis. Three women with and 9 without fibromyalgia were excluded due to the lack of ESR, making it impossible to calculate DAS28. The group of excluded patients did not differ from the rest. The characteristics of the 53 women remaining and the differences between the 2 groups are presented in Table. Seventeen per cent of the women included had fibromyalgia, a larger percentage than that observed for the female Spanish population in the EPISER study (4.2%; *P*<.000),[6] and similar to that observed in studies with patients with RA and fibromyalgia.[2,3] No differences were observed in the biologic parameters or in the number of swollen joints, put they were observed in the number of tender joints and in the global evaluation by the patient (Figure). No differences were observed in the type of

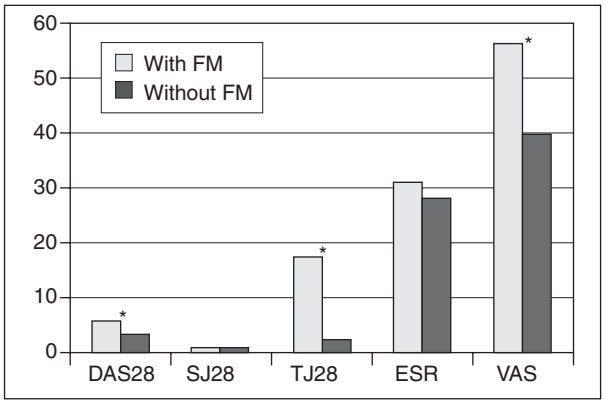

Figure. *Graphic representation of the DAS28 results and variables that intervene in its calculation. *P≤.05. ESR indicates erythrocyte sedimentation rate; FM, fibromyalgia; SJ28, swollen 28 joint count; TJ28, tender 28 joint count; VAS, general disease visual analog scale.*

treatment received by the patient (non-steroidal anti-inflammatory drugs, steroids, antimalarials, sulphasalazine, leflunomide) except for methotrexate, which was indicated with less frequency in women with fibromyalgia (22 vs 1; *P*=.032). No patient received or had received biologic treatment.

DAS28 was higher in patients with fibromyalgia. Similar results were obtained when calculating the DAS (data not shown). According to DAS28, the activity of RA was low, moderate, or elevated in 52.3%, 38.6%, and 9.1% of the patients without fibromyalgia, respectively, versus 0%, 22.2%, and 77.8% of patients with fibromyalgia (*P*<.000).

Discussion

The results of our study show that women with RA and fibromyalgia have a worse DAS28 score than patients with no fibromyalgia, and that this difference is due to a worse score in the global evaluation of disease and the number of tender joints. We have been unable to find articles that evaluate DAS in patients with RA with or without fibromyalgia. However, our results are in the same line of reasoning as those obtained by other authors that use other scales to measure activity, pain, and fatigue. In that sense, Naranjo et al[2] have observed a worse functional capacity and quality of life in patients with RA if they have fibromyalgia, in spite of not presenting differences in the characteristics of arthritis with relation to the group without fibromyalgia. Wolfe et al[3] obtained similar results regarding pain and fatigue and, in addition, they conclude that the social, sanitary, and economic cost of this differences is larger in patients with fibromyalgia.

Our results show an important influence of the coexistence of fibromyalgia in the DAS28 value. However, we are conscious of some limitations in our study. First, the number of patients is small, mainly because of their origin in a single outpatient clinic, the exclusion of male patients and the short recruitment period, only 4 months. However, the results obtained show very significant differences, which would probably indicate that the influence of fibromyalgia on DAS28 is real.

The reduced number of patients recruited obliged us to choose this study design, instead of another such as cases and controls. To avoid possible bias, we included all patients with RA visited during the study period, with the only difference being the presence or absence of associated fibromyalgia. In order to identify differences in the characteristics of RA, data on disease and treatment were collected. The comparison of these variables (age, ESR, CRP, number of swollen joints, time since onset of disease) between the 2 groups did not show differences in any of them and allows is to attribute those differences found in DAS to the presence of fibromyalgia.

A single investigator carried out the evaluation and classification of patients, with previous knowledge of the diagnosis of; the diagnosis of fibromyalgia was done at the moment of examination for painful points, after questioning the patient in regard to the extension of pain, independently of the previous diagnosis given to the patient. As a consequence, a patient was diagnosed de novo and another patient was excluded when she was found not to have ACR criteria for the classification of fibromyalgia. In any case, the fact that the examination was not blinded can introduce bias whose existence should be confirmed in future studies.

Because DAS28 is currently considered as determinant for the evaluation of patients with RA, and has influence in the indication or modification of treatment,[7-9] we consider that it must take into account the presence of fibromyalgia as a factor that leads to an overestimation of this index. This conclusion is similar to the one proposed by Leeb et al[10] when comparing patients with RA and patients with fibromyalgia.

The importance of overestimating DAS28 can be large if one considers that our sample lacked patients undergoing biologic treatment, though the results of the DAS28 indicate that they would have been candidates for such treatment, especially those in the fibromyalgia group.

In conclusion, DAS28 calculated in women with RA is larger than in those that also have fibromyalgia. In our sample, this effect can be explained through an increased sensitivity to pain and a worse perception of the general health associated to fibromyalgia.

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