

## Original article

## Prevalence of symptoms of anxiety and depression in patients with psoriatic arthritis attending rheumatology clinics

Mercedes Freire,<sup>a</sup> Jesús Rodríguez,<sup>b</sup> Ingrid Möller,<sup>c</sup> Antonio Valcárcel,<sup>d</sup> Carmelo Tornero,<sup>e</sup> Gemma Díaz,<sup>f</sup> Yolanda Armendáriz,<sup>g,\*</sup> Silvia Paredes<sup>h</sup>

<sup>a</sup>Hospital Juan Canalejo, A Coruña, Spain

<sup>b</sup>Hospital Universitari de Bellvitge, Barcelona, Spain

<sup>c</sup>Instituto POAL, Barcelona, Spain

<sup>d</sup>Hospital Nuestra Señora del Rossell, Cartagena, Murcia, Spain

<sup>e</sup>Hospital Morales Meseguer, Murcia, Spain

<sup>f</sup>Fundación Jiménez Díaz, Madrid, Spain

<sup>g</sup>Departamento médico Wyeth, Madrid, Spain

<sup>h</sup>Hospital Sant Joan de Reus, Tarragona, Spain

## ARTICLE INFO

## Article history:

Received December 23, 2009

Accepted March 1, 2010

## Keywords:

Psoriatic arthritis

Anxiety

Depression

Prevalence

## ABSTRACT

**Fundamental and objective:** Psychological impairment is frequent in patients with rheumatic diseases. The aim of the study was to assess the prevalence of symptoms of anxiety and depression in patients with psoriatic arthritis attending rheumatology clinics.

**Patients and method:** Multicentre cross-sectional study conducted in rheumatology clinics. Patients with psoriatic arthritis were recruited; variables retrieved were sociodemographic, clinical and patient centered (Hospital Anxiety and Depression scale or HADs, EQ-5D questionnaire, etc.).

Prevalence in the study population was calculated as anxiety or depression symptoms by an HADs score  $\geq 11$  or those receiving pharmacological treatment. A logistic regression model was used to know which variables were related to symptoms of anxiety or depression.

**Results:** A total of 495 patients were included, 42.8% were women and median (SD) age was 50.4 (12.7) years.

Prevalence of symptoms of anxiety were 29.7% and prevalence of symptoms of depression was 17.6%. Patients with anxiety or depression symptoms had all EQ-5D dimensions affected ( $P < .01$ ).

Higher prevalence of anxiety was related to being a woman, a mixed onset pattern with respect to peripheral joints and those treated with DMARD alone with respect to DMARD+NSAID or biologic alone. A higher depression prevalence was related to being a woman and a mixed onset pattern with respect to peripheral joints.

**Conclusion:** The prevalence of anxiety symptoms and the prevalence of depression symptoms are high among patients suffering psoriatic arthritis in the studied population.

© 2009 Elsevier España, S.L. All rights reserved.

## Prevalencia de síntomas de ansiedad y de depresión en pacientes con artritis psoriásica en consultas de reumatología

## RESUMEN

**Fundamento y objetivo:** Las alteraciones psicológicas son frecuentes entre pacientes con enfermedades reumáticas. El objetivo del estudio fue conocer la prevalencia de los síntomas de ansiedad y depresión en pacientes con artritis psoriásica que acuden a consultas de reumatología.

**Pacientes y método:** Estudio transversal multicéntrico en consultas de reumatología. Se seleccionaron pacientes con artritis psoriásica; se recogieron variables sociodemográficas, clínicas y centradas en el paciente (Escala Hospitalaria de Ansiedad y Depresión o HADs, cuestionario EQ-5D, etc.).

## Palabras clave:

Artritis psoriásica

Ansiedad

Depresión

Prevalencia

\* Corresponding author.

E-mail address: [armendy@wyeth.com](mailto:armendy@wyeth.com) (Y. Armendáriz).

Se calculó la prevalencia de síntomas de ansiedad y depresión en esta población según una puntuación  $\geq 11$  en HADs o estar recibiendo tratamiento farmacológico. Se utilizó un modelo de regresión logística para conocer las variables relacionadas con la presencia de síntomas de ansiedad o depresión.

**Resultados:** Se incluyeron 495 pacientes, 42,8% mujeres y edad media (DE) de 50,4 (12,7) años.

La prevalencia de síntomas de ansiedad fue 29,7% y 17,6% de depresión. Los pacientes con síntomas de ansiedad o depresión presentaron mayor afectación en todas las dimensiones del EQ-5D ( $p < 0,01$ ).

La mayor prevalencia en la población de estudio de ansiedad se relacionó con ser mujeres, patrón de debut mixto respecto al periférico y en tratamiento con FAME en monoterapia respecto a FAME+AINES o biológico en monoterapia. La mayor prevalencia de depresión se relacionó con ser mujeres y patrón de debut mixto respecto al periférico.

**Conclusión:** La prevalencia de síntomas de ansiedad y de depresión es elevada en pacientes con artritis psoriásica en la población de este estudio.

© 2009 Elsevier España, S.L. Todos los derechos reservados.

## Introduction

The course of rheumatic diseases such as rheumatoid arthritis (RA), ankylosing spondylitis, or psoriatic arthritis include chronic pain and disability. Patients with these illnesses may suffer psychological disorders brought on by the disability entailed.<sup>1</sup> In fact, psychological disorders such as anxiety or depression are common among patients suffering from RA<sup>2</sup>; it has been calculated that 13.4% have a diagnosis of anxiety and 41.5% are diagnosed with depression.<sup>3</sup> In the case of ankylosing spondylitis, anxiety is present in 25% of all patients and depression in 15%–30%.<sup>2,4</sup>

Patients with psoriatic arthritis present an overall assessment of their Health-Related Quality of Life (HRQoL) similar to that of individuals with RA, although the former are found to suffer from greater limitation in daily living due to emotional issues and a greater perception of pain as quantified by means of a Visual Analogue Scale (VAS).<sup>5</sup> Furthermore, patients with psoriasis or psoriatic arthritis exhibit other alterations in their HRQoL, especially in the psychosocial domain, oftentimes suffering feelings of embarrassment, impotence, and depression.<sup>6</sup>

No studies conducted in Spain exploring the association of psychological symptoms such as anxiety or depression in patients with psoriatic arthritis have been located. The aim of this study was to understand the prevalence of anxious and depressive symptomatology in patients with psoriatic arthritis seeking care at rheumatology clinics in Spain.

## Patients and method

Epidemiological, cross-sectional, multi-centre study carried out in 75 hospitals in Spain between May 2008 and January 2009. A total of 80 rheumatologists participated in the study.

Each investigator included consecutive patients over 18 seeking care at the rheumatology clinic and diagnosed with psoriatic arthritis by a rheumatologist. Informed consent to participate was obtained from all patients. The study was approved by a reference Clinical Research Ethics Committee.

During the only study visit, socio-demographic variables (age, gender, level of studies, labour status, and habitat), clinical variables (presence of chronic concomitant illnesses, history of psoriatic arthritis, activity of psoriatic arthritis, and its treatment), and patient-based variables (Hospital Anxiety and Depression scale or HAD,<sup>7</sup> Psychological Well-Being Index (PWBI),<sup>8</sup> the EQ-5D<sup>9</sup> questionnaire, evaluation of functional capacity by means of the Health Assessment Questionnaire (HAQ)<sup>10,11</sup> or the Bath Ankylosing Spondylitis Functional Index (BASFI)<sup>12</sup> depending on whether the predominant pattern of joint involvement was peripheral or axial, or both if the pattern was mixed) were recorded by consulting the clinical history.

In order to determine the activity of psoriatic arthritis, the latest values available for the DAS-28 index<sup>13</sup> (in patients with a peripheral or mixed pattern of joint involvement) and/or the BASDAI<sup>14</sup> index

(in patients with an axial or mixed pattern of joint involvement), as well as the VAS pain score were recorded. The DAS-28 index is an index of arthritic activity based on the inflamed, painful joints, calculated on the basis of 28 joints; whereas the BASDAI index (Bath Ankylosing Spondylitis Activity Index) is a combined index appraising arthritic activity on the basis of fatigue, axial pain, peripheral joint involvement, enthesopathy, and morning stiffness.

Insofar as patient-report scores are concerned, the HAD score is used as a screening tool to detect patients with anxiety and depression disorder within the non-psychiatric hospital framework. It consists of two sub-scores: the HAD-A for anxiety and HAD-D for depression; each sub-score ranges from 0 to 21 points; scores  $\geq 11$  indicate the presence of anxious or depressive disorders; scores between 8–10 points are borderline abnormal, and scores of  $\leq 7$  indicate that the disorder is not present. The PWBI subjectively evaluates well-being or discomfort; in six dimensions: anxiety, depression, self-control, feeling of well-being, vitality and health in general; scores range between 22 and 132 points. Scores ranging from 22 to 82 points indicate severe discomfort; moderate discomfort is indicated by scores of 83–94, and well-being is determined by a score of 95–132 points. The HRQoL EQ-5D questionnaire consists of two parts, a descriptive system and a VAS; the former measures health in five dimensions: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression, each one with three degrees of severity (“no problems”, “some or moderate problems”, “severe problems”); the VAS evaluates the patient’s general health status on a scale of 0 (the worst imaginable health state) and 100 (the best imaginable health state). For its part, the HAQ questionnaire evaluates the impact of the disease on the patient’s functional capacity; it comprises 20 items in 8 dimensions: dressing and grooming, rising, eating, walking, personal hygiene, reaching or gripping objects and other activities: each question has four categories of response on a Likert score of 0 (“without any difficulty”) to 3 (“unable to do”); additionally, it includes a VAS for patient-reported intensity of pain; the global score on the questionnaire varies between 0 (normal functional capacity) and 3 (maximum disability), whereas the VAS is measured in millimetres. Finally, the BASFI was also used. It is a questionnaire evaluating the functional capacity of patients with ankylosing spondylitis and consists of 10 questions about the degree of difficulty they have in carrying out different basic activities. Responses are given on a VAS that ranges from “no problem or easy” up to “impossible”; the final score is the sum of each of the measurements on the 10 items divided by 10.

The patients had to answer the questionnaires during the study visit.

## Statistical analysis

A descriptive analysis was conducted in order to present the socio-demographic and clinical variables of the study sample. The continuous variables were described in terms of the mean and

standard deviation (SD), whereas the categorical variables were summarized by counting up the number of cases and the frequency for each category of response.

The prevalence of anxiety and depression is presented on the basis of three criteria: as per the score on the corresponding sub-scores of the HAD questionnaire, in terms of the treatment they are receiving for anxiety/depression recorded in the clinical history, and according to both criteria. This last criterion, the HAD score  $\geq 11$  or receiving drug treatment, is the one used to stratify the study sample, presenting the results for the total sample and for the sub-groups of patients with/without the presence of anxious symptomatology and with/without the presence of depressive symptoms.

The HRQoL of the patients with psoriatic arthritis is reported in terms of the general PWBI score, as well as the score for each dimension. The descriptive system of the EQ-5D has been used to present the percentage of patients with problems in each of the dimensions and the VAS by means of the mean and 95% CI. The global score on the HAQ questionnaire is given, as are the scores on each of the dimensions, in addition to the global BASFI score.

For the purposes of inter-group comparisons, the OR of the Mann-Whitney test was used in the case of continuous variables and Chi squared in the case of categorical variables.

Furthermore, a logistic regression model was used to determine the patient socio-demographic and clinical variables that might be related to the presence of anxious symptomatology or depression (based on the HAD score  $\geq 11$  or if the patient was receiving drug treatment).

In all cases, an  $\alpha$  level of 0.05 was considered for statistical significance. The statistical analysis was performed using the SPSS statistical software package version 15.0 for Windows®.

## Results

### Socio-demographic and clinical characteristics

A total of 495 patients with psoriatic arthritis were included in the study. The mean age (SD) was 50.4 (12.7) years; 42.8% were female; 5.5% had no formal educational qualifications; 38.8% lived in an urban setting, and 28.3% lived in a metropolitan setting. Table 1 illustrates the patients' socio-demographic characteristics.

At the time of the study visit, 95.6% of the patients also had a diagnosis of psoriasis and a mean (SD) of 7.7 (6.8) years had elapsed since the time of diagnosis of psoriatic arthritis. Insofar as the pattern of debut of psoriatic arthritis is concerned, it was peripheral in 70.5% of the patients, axial in 5.5%, and in 24%, it was mixed (Table 1).

More than half (54.1%) of the patients presented chronic diseases associated with psoriatic arthritis. The most common chronic illnesses were endocrine, metabolic, or nutritional, in 39.9%, particularly hypercholesterolemia and diabetes mellitus, each of which were present in 11.9% of the patients with concomitant diseases.

The DAS-28 index yielded a mean (SD) of 3.0 (1.3) points, which indicated a low level of activity of the psoriatic arthritis. The mean BASDAI index (SD) was 7.4 (11.3) points (Table 2), indicating that the control of the disease was sub-optimal in patients with an axial or mixed pattern of debut of psoriatic arthritis. The mean (SD) score on the pain VAS was 33.4 (23.2).

Up to 97.8% of the patients included in the study were following specific treatment for psoriatic arthritis, 67.1% were taking disease-modifying anti-rheumatic drugs (DMARD) and 46.9% with biological agents. Based on active ingredients, the most common was methotrexate (52.9%) followed by etanercept (26.0%). In terms of treatment regimes, we found that 18.8% of the patients were on monotherapy with DMARD; 17.4% were following monotherapy with biological agents; 16.3% were taking a combination of DMARD and NSAID, and 13.8% were on a combination of DMARD and biological agents (Table 3).

**Table 1**

Socio-demographic and clinical characteristics of the participants in the study

	Total	
	Mean	SD
Age, years	50.4	12.7
Gender	n	%
Male	283	57.2
Female	212	42.8
Level of studies		
Doesn't know how to read or write	2	0.4
No formal qualifications	27	5.5
Primary school studies	234	47.3
Secondary school studies	161	32.5
University studies	69	13.9
NA	2	0.4
Labour status		
Actively employed	257	51.9
Actively employed, on temporary leave	28	5.7
On permanent leave	31	6.3
Unemployed	20	4.0
Retired	84	17.0
Homemaker	75	15.2
Habitat		
Rural (<10,000 inhab.)	73	14.7
Semi-urban (>10,000-<30,000 inhab.)	90	18.2
Urban (>30,000-<200,000 inhab.)	192	38.8
Metropolitan (>200,000 inhab.)	140	28.3
Pattern of debut of arthritis		
Axial	27	5.5
Peripheral	349	70.5
Mixed	119	24.0
Not valid	495	

NA indicates no available; SD, standard deviation.

The 495 patients included in the study were stratified into 2 groups on the basis of a score  $\geq 11$  on the HAD or receiving drug treatment for psychological disorder: 147 (29.7%) patients in the anxiety group and 87 (17.6%) in the depressive symptoms group. It is worth mentioning that 71 patients (14.3%) presented both and 332 (67.1%) presented neither anxious nor depressive symptomatology.

The mean (SD) score by the study participants on the HAD-A was 7.63 (4.25) points, with a median of 7.00 points. The prevalence of anxious symptomatology based on the HAD score was 26.1% of the patients included (95% CI: 22.0%; 30.0%).

The mean (SD) score by the study subjects on the HAD-D was 5.49 (4.00) points, with a median of 5.00 points. Based on HAD scores, 11.7% of the patients (95% CI: 8.9%; 14.5%) presented symptoms of depression.

With respect to drug treatment for affective disorders, 8.3% of the patients in the study were receiving treatment for anxiety and 8.9% for depression.

When defining anxiety and depression as the presence of the disorder according to a score  $\geq 11$  points on the HAD or as receiving prescription drug treatment for such disorders, the prevalence of anxiety was estimated to be 29.7% (95% CI: 25.7%; 33.7%) and the prevalence of depression was 17.6% (95% CI: 14.2%; 21.0%) (Figure 1).

Statistically significant differences were observed between the percentage of women who did not present anxious symptomatology or depression versus those who did [36.2% vs 58.5% in the case of anxiety ( $P < .01$ ) and 40.0% vs 56.3% for symptoms of depression ( $P < .01$ )] and of patients with no formal educational qualifications [4.0% vs 8.8% for the presence of anxious symptomatology ( $P < .05$ ) and

**Table 2**

Activity of psoriatic arthritis: scores on the DAS-28, BASDAI, and pain VAS globally and by groups of anxiety and depression

	Anxiety*					Depression*					Total	
	Not present		Anxiety		P	Not present		Depression		P	Mean	SD
	Mean	SD	Mean	SD		Mean	SD	Mean	SD			
DAS-28 index (No.=314)	2.9	1.3	3.2	1.3	<.05	2.9	1.3	3.3	1.3	ns	3.0	1.3
BASDAI index (No.=41)	6.1	10.8	9.2	12.1	ns	7.4	11.5	7.1	11.1	ns	7.4	11.3
Score on pain VAS (No.=321)	30.0	22.7	40.9	22.6	<.01	31.3	22.9	43.4	21.8	<.01	33.4	23.2

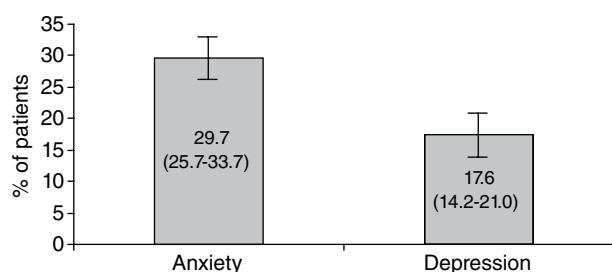
BASDAI indicates Bath Ankylosing Spondylitis Activity Index; ns, not significant; SD, standard deviation; VAS, Visual Analogue Scale.

\*HAD score  $\geq 11$  or receiving drug treatment.**Table 3**

Leading treatment regimes for psoriatic arthritis received by the patients overall and broken down by groups of anxiety and depression

	Anxiety*					Depression*					Total	
	Not present		Anxiety		P	Not present		Depression		P	n	%
	n	%	n	%		n	%	n	%			
DMARD	57	62.6	34	37.4	ns	72	79.1	19	20.9	ns	91	18.8
Biological agents	67	79.8	17	20.2	<.05	71	84.5	13	15.5	ns	84	17.4
DMARD+NSAID	63	79.7	16	20.3	ns	66	83.5	13	16.5	ns	79	16.3
DMARD+biological agents	49	73.1	18	26.9	<.05	57	85.1	10	14.9	ns	67	13.8

DMARD, disease-modifying anti-rheumatic drugs; ns, not significant; NSAID, non-steroid anti-inflammatory drugs.

\*HAD score  $\geq 11$  or receiving drug treatment.**Figure 1.** The prevalence (95% CI) of anxious and depressive symptomatology based on HAD scores and drug treatment in patients with psoriatic arthritis.

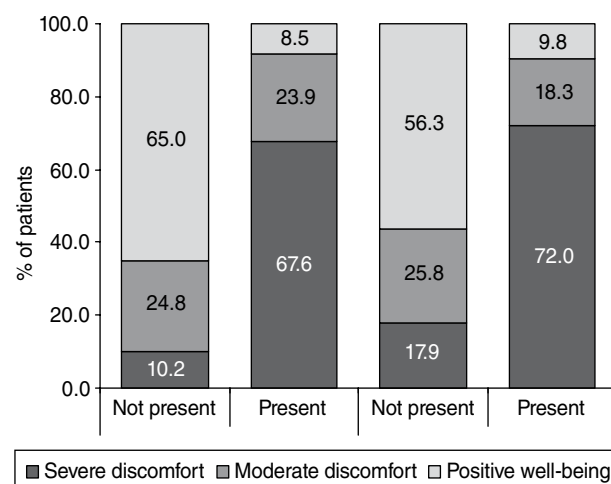
3.7% vs 13.8% for the presence of depression ( $P<.01$ ]). The presence of chronic illness was more common among the patients with anxious or depressive symptomatology in comparison with those who did not present the disorder [64.6% vs 49.7% for anxiety ( $P<.01$ ) and 79.3% vs 48.8% for depression ( $P<.01$ )].

The mean values on the DAS-28 index and on the pain VAS of pain were higher among the patients with anxious symptomatology versus those who did not suffer from anxiety ( $P<.05$  and  $P<.01$ , respectively) (Table 2).

It is interesting to note that among the individuals receiving biological treatment, in monotherapy or in combination with DMARD, a lower prevalence of anxious symptomatology is seen versus patients being treated with other drugs or combinations ( $P<.05$ ) (Table 3).

#### Involvement of psoriatic arthritis in daily living

The mean global score (SD) on the PWBI was 93.2 (18.8) points (a score of 22 points represents severe discomfort and 132 positive psychological well-being), with greater psychological discomfort being observed among patients with anxious symptomatology [74.9 (15.1)] or depression [71.0 (17.1)] versus those who did not present these types of symptoms [100.8 (14.5) and 97.8 (15.7), respectively] ( $P<.01$  for both). Moreover, a higher percentage of patients with anxious symptomatology or depression (67.6% and 72.0%, respectively) exhibited severe discomfort (score between 22–82) as

**Figure 2.** Group of psychological well-being according to the PWBI (severe discomfort, moderate discomfort, and positive well-being) of patients with psoriatic arthritis according to presence or absence of symptoms for each disorder.

compared to those who did not present said disorders (10.2% and 17.9%, respectively) ( $P<.01$  for both) (Figure 2).

On the basis of the scores obtained on the EQ-5D questionnaire, more than 70% of the patients stated that they had some problems on the pain/discomfort dimension (Figure 3). Among the subjects with anxious symptomatology or depression, a higher degree of involvement in the five dimensions of the questionnaire ( $P<.01$  for all cases) is seen. The mean (SD) score on the VAS of the EQ-5D was 64.7 (19.9) points with a median of 68.0 points (95% CI: 62.9; 66.5); for patients with anxious symptomatology, the mean (SD) score was 56.6 (19.3) and for those with depressive symptoms, it was 52.8 (20.4); these are lower in both cases than for those who did not present these disorders [68.1 (19.1) and 67.2 (18.8), respectively] ( $P<.01$  for both), indicating a worse health state.

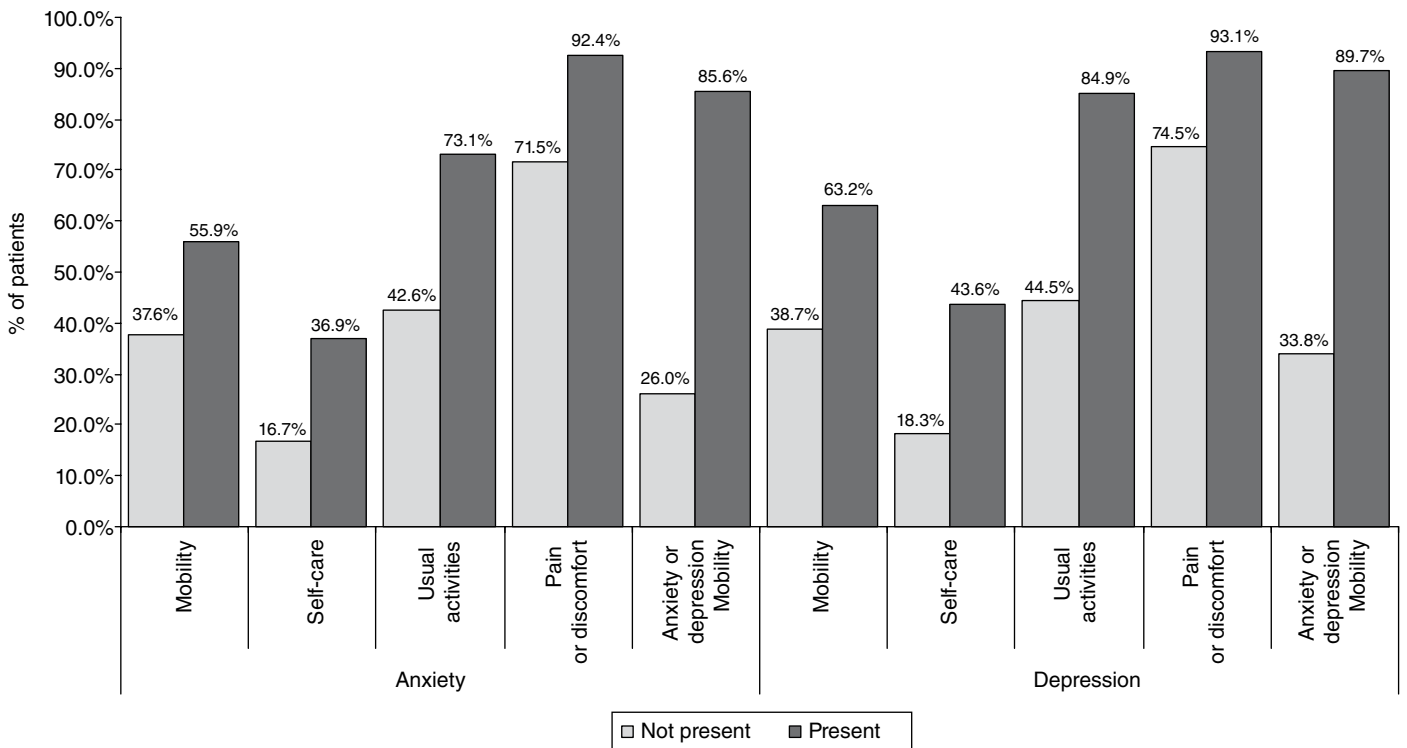
Patients with peripheral or mixed pattern of debut of psoriatic arthritis presented a mean (SD) global score on the HAQ of 0.67 (0.64). It is worth noting that scores were higher in patients with anxiety

or depression on all the dimensions than in patients without these disorders ( $P<.01$  in all cases), indicating greater disability (Table 4).

As regards the BASFI, the mean (SD) score of the patients was 4.2 (2.5) points; the scores were higher in patients with symptoms of anxiety or depression ( $P<.01$  for both), indicating greater disability in carrying out basic activities (Table 4).

The logistic regression model used to evaluate the factors associated with the presence of anxious symptomatology revealed that the female patients (OR=2.92), patients with secondary level studies (OR=2.15), and unemployed patients (OR=3.82) are significantly more likely to present these symptoms than are males, patients with university studies, or actively employed individuals, respectively. It was also seen that patients in whom the disease had a peripheral debut (OR=0.52) or with a family history (OR=0.62) display

a lower prevalence than those with a mixed debut of illness or those who do not have a positive family history. Insofar as treatment was concerned, patients treated with FAME+NSAID (OR=0.39) or with biological agents in monotherapy (OR=0.44) exhibited a significantly lower presence of symptoms than patients in monotherapy with FAME. When the factors associated with the presence of symptoms of depression were examined using a second regression model, females (OR=2.25), patients lacking formal qualifications (OR=10.09) or with secondary studies (OR=4.63), and patients temporarily (OR=3.10) or permanently (OR=5.55) on sick leave were seen to be significantly more prone to presenting depressive symptoms than males, patients with university studies, or those who were actively employed, respectively. As occurred in the prevalence of depressive symptoms, it was also seen that patients with a peripheral debut (OR=0.49) of the disease



**Figure 3.** Patients with psoriatic arthritis who reported problems for each of the dimensions on the HRQoL EQ-5D questionnaire according to the presence or absence of symptoms for each disorder.

**Table 4**  
Score on the indices of functional capacity: HAQ global and by dimensions and BASFI

	Anxiety*					Depression*					Total	
	Not present		Anxiety		P	Not present		Depression		P	Mean	SD
	Mean	SD	Mean	SD		Mean	SD	Mean	SD			
HAQ global (0-3)	0.54	0.59	0.97	0.65	<.01	0.58	0.59	1.07	0.70	<.01	0.67	0.64
a) Dressing and grooming	0.40	0.69	0.82	0.79	<.01	0.45	0.70	0.89	0.82	<.01	0.53	0.74
b) Rising	0.45	0.69	0.92	0.81	<.01	0.52	0.72	0.94	0.82	<.01	0.59	0.75
c) Eating	0.52	0.79	0.89	0.88	<.01	0.54	0.77	1.06	0.98	<.01	0.63	0.83
d) Walking/walking outdoors	0.47	0.69	0.79	0.79	<.01	0.50	0.70	0.85	0.82	<.01	0.56	0.74
e) Personal hygiene	0.41	0.67	0.85	0.82	<.01	0.46	0.70	0.90	0.85	<.01	0.54	0.75
f) Reaching objects	0.68	0.80	1.20	0.83	<.01	0.74	0.81	1.25	0.86	<.01	0.83	0.84
g) Gripping objects	0.68	0.89	1.06	0.95	<.01	0.71	0.89	1.19	0.99	<.01	0.79	0.93
h) Other activities	0.70	0.84	1.25	0.86	<.01	0.73	0.84	1.46	0.82	<.01	0.86	0.88
Not valid	No.=317	No.=133	No.=369	No.=81		No.=450						
BASFI (1-10)	3.4	2.2	5.5	2.5	<.01	3.8	2.4	5.5	2.5	<.01	4.2	2.5
Not valid	No.=86	No.=47	No.=103	No.=30		No.=133						

BASFI indicates Bath Ankylosing Spondylitis Functional Index; HAQ, Health Assessment Questionnaire; SD, standard deviation.

\*Score HAD  $\geq 11$  or receiving drug treatment.

exhibit a lower prevalence than those in whom debut was mixed. The presence of concomitant diseases (OR=3.98) was also associated with a greater propensity to present symptoms of depression.

## Discussion

The study revealed that there was a prevalence rate of 29.7% for patients with anxious symptoms in the population of patients with psoriatic arthritis seeking care at rheumatology clinics, whereas the prevalence of symptoms of depression was 17.6%, revealing a higher percentage for both disorders in comparison with the general Spanish population, which is estimated to be 9.4%, in the case of anxiety and 11.5%, for depression.<sup>15</sup> There is a higher prevalence of affective disorders among patients suffering from psoriatic arthritis, highlighting the tremendous increase in the prevalence of anxious symptomatology among the patients in our study, some 20 percentage points above the prevalence in the general population, which suggests the enormous impact psoriatic arthritis has on patients' psycho-affective life.

There was a 17.6% prevalence rate for patients with symptoms of depression among patients with psoriatic arthritis in this study, a percentage that is well below the 30% one study detected in Italy<sup>16</sup>; the differences between both studies might be attributed to how data were recorded and to the definition of depression used in each study. In our study, a patient was deemed to have symptoms of depression when their clinical history included a diagnosis of depression or if the patient was taking medication for depression, whereas in the Italian study, patients were asked directly if they were suffering from depression by means of a non-validated questionnaire. Psychological affectation of patients with PA is foreseeable if one also takes into account the psychological involvement of a large proportion of individuals diagnosed with psoriasis. It is a well-known fact that patients with psoriasis often suffer psychological disorders such as depression as a result of their disease<sup>17</sup> and present mental disorders more often than do patients with other chronic diseases of the skin, such as atopic dermatitis,<sup>18</sup> with several studies having shown the association between psoriasis and depression.<sup>19,20</sup>

A comprehensive study conducted on patients with ankylosing spondylitis revealed that they too suffer important alterations in the psycho-affective sphere and found a prevalence rate of 23% for both anxiety and depression.<sup>21</sup> The comparison of these data with the data found in our study (29.7% for anxiety and 17.6% for depression) suggests that psoriatic arthritis produced more anxiety disorders among individuals with the disease, whereas ankylosing spondylitis causes greater mood disturbances.

The results of a study recently published point out the lower prevalence of anxiety or depression disorders among patients being treated with biological agents in patients with RA,<sup>22</sup> suggesting that biological drugs might have a beneficial effect on the emotional state of these patients. The results of the present study also show a lower prevalence of anxious symptomatology in patients seeking care at rheumatology clinics and being treated with biological agents, although it would be of interest to carry out more research examining the relation between the use of biological agents and the presence of psycho-affective alterations.

Patients with psoriatic arthritis and anxiety or depression display greater involvement in the 5 dimensions of the EQ-5D questionnaire (a lower score) and also score lower on the VAS included in the same questionnaire; that is, patients with anxious or depressive disorders in psoriatic arthritis have a worse health status than do patients with psoriatic arthritis without these disorders. The emotional burden of the physical problems associated with both psoriasis as well as psoriatic arthritis was already known to affect the psychosocial sphere, representing a significant problem for more than 60% of the patients who suffer from these illnesses.<sup>6</sup> Moreover, Sampogna et

al<sup>23</sup> saw that the HRQoL of patients with psoriasis is more severely affected when the psoriasis presents palmar-plantar affectation or with pustules, or psoriatic arthritis, affecting all the dimensions of the HRQoL reported on the SF-36 generic questionnaire. The results of the study corroborate the data previously obtained with respect to the impact on the HRQoL of patients with psoriasis and psoriatic arthritis.

The involvement of the HRQoL, especially in the psychosocial setting had also been observed in other spondyloarthropathies, such as ankylosing spondylitis,<sup>24</sup> osteoarthritis,<sup>25</sup> or RA<sup>5</sup>; it had even been demonstrated that people with psoriasis rate their HRQoL worse than patients with other chronic diseases such as congestive heart failure or chronic pulmonary disease.<sup>26</sup> The greater involvement of HRQoL in patients with spondyloarthropathies, including psoriatic arthritis can be accounted for by the pain and disability these diseases represent for the patient in comparison with other, equally chronic illnesses. In fact, it has been seen that RA causes the patient greater disability, although the pain does not differ significantly from the pain patients with psoriatic arthritis present.<sup>5</sup> As a result, it would seem logical to think that the chronic pain suffered by these patients may be related to the anxiety and depression disorders.

It is worth pointing out that although statistically significant differences were seen, as regards the activity of psoriatic arthritis according to the DAS-28 index, in patients with anxious disorders in comparison with those who did not present these disorders, the differences between the scores were minimal; hence, these statistical differences were considered to lack clinical relevance.

One limitation of the study is the design itself, as it is a cross-sectional study with retrospective data collection. Moreover, there may have been an information bias, in that a clinical diagnosis of anxiety and depression was not made by a psychiatrist or psychologist at the time of the study visit, although its effect was minimized by assessing the anxious and depressive disorders by means of a specific, standardized questionnaire, the HAD, validated for the Spanish population and widely used.<sup>27–29</sup> Information was also collected as to whether or not the patient had been diagnosed or was on medication for anxiety and depression prior to beginning the study, although being on anxiolytic or anti-depressant treatment can hardly be considered a diagnosis of either of these disorders. On the other hand, it is difficult to determine to what degree skin involvement of psoriasis contributes to the result of the questionnaires.

## Conclusions

The prevalence of anxiety and depression is high in individuals with psoriatic arthritis in this study population. In the population admitted into the study, by type of treatment strategy, patients being treated with biological agents present a lower prevalence rate of anxious symptomatology. This study provides important information regarding the psycho-affective involvement of patients with psoriatic arthritis within the setting of rheumatology clinics in Spain in a large population of patients, although more prospective studies would be needed.

## Conflict of interest

The authors state that there is no conflict of interests.

## Acknowledgements

The study sponsor, Wyeth Farma, together with the authors of the manuscript would like to thank the investigators in the ADAS study for their participation, as well as express their gratitude for the technical and logistical support provided by IMS Health®.

## References

- Basler HD. Group treatment for pain and discomfort. *Patient Educ Couns*. 1993;20:167-75.
- Barlow JH, Macey SJ, Struthers GR. Gender, depression and ankylosing spondylitis. *Arthritis Care Res*. 1993;6:45-51.
- Isik A, Koca SS, Ozturk A, Mermi O. Anxiety and depression in patients with rheumatoid arthritis. *Clin Rheumatol*. 2007;26:872-8.
- Martindale J, Smith J, Sutton CJ, Grennan D, Goodacre L, Goodacre JA. Disease and psychological status in ankylosing spondylitis. *Rheumatology*. 2006;45:1288-93.
- Husted JA, Gladman DD, Farewell VT, Cook RJ. Health-Related Quality of Life of patients with psoriatic arthritis: a comparison with patients with rheumatoid arthritis. *Arthritis Care Res*. 2001;45:151-8.
- Mease PJ, Menter M. Quality-of-life in psoriasis and psoriatic arthritis: outcome measures and therapies from a dermatological perspective. *J Am Acad Dermatol*. 2006;54:685-704.
- Herrmann C. International experiences with the Hospital Anxiety and Depression Scale—a review of validation data and clinical results. *J Psychosom Res*. 1997;42:17-41.
- Badía X, Gutierrez F, Wiklund I, Alonso J. Validity and reliability of Spanish version of the General Well Being Index. *Quality Life Res*. 1996;5:101-8.
- Badía X, Roset M, Monserrat S, Herdman M, Segura A. La versión española del EuroQol: descripción y aplicaciones. *Med Clin*. 1999;112:79-85.
- Fries JF, Spitz P, Kraines RG, Holman HR. Measurement of patient outcomes in arthritis. *Arthritis Rheum*. 1980;23:137-45.
- González V, Stewart A, Ritter P, Lorig K. Translation and validation of arthritis outcome measures into Spanish. *Arthritis Rheum*. 1995;38:1429-46.
- Ariza-Ariza R, Hernández-Cruz B, Navarro-Sarabia F. Physical function and health-related quality of life of Spanish patients with ankylosing spondylitis. *Arthritis Rheum*. 2003;49:483-7.
- Prevo ML, Van 't Hof MA, Kuper HH, Van Leeuwen MA, Van de Putte LB, Van Riel PL. Modified disease activity scores that include twenty-eight-joint counts. Development and validation in a prospective longitudinal study of patients with rheumatoid arthritis. *Arthritis Rheum*. 1995;38:44-8.
- Ariza-Ariza R, Hernández-Cruz B, Navarro-Sarabia F. La versión española del BASDAI es fiable y se correlaciona con la actividad de la enfermedad en pacientes con espondilitis anquilosante. *Rev Esp Reumatol*. 2004;31:372-8.
- Haro JM, Palacín C, Vilagut G, Martínez M, Bernal M, Luque I, et al; Grupo ESEMeD-España. Prevalencia de los trastornos mentales y factores asociados: resultados del estudio ESEMeD-España. *Med Clin (Barc)*. 2006;126:445-51.
- Altobelli E, Maccarone M, Petrocelli R, Marziliano C, Giannetti A, Peris K, et al. Analysis of health care and actual needs of patients with psoriasis: a survey on the Italian population. *BMC Public Health*. 2007;7:59.
- Biljan D, Laufer D, Filaković P, Situm M, Brataljenović T. Psoriasis, mental disorders and stress. *Coll Antropol*. 2009;33:889-92.
- Leibovici V, Canetti L, Yahalomi S, Cooper-Kazaz R, Bonne O, Ingber A, et al. Well being, psychopathology and coping strategies in psoriasis compared with atopic dermatitis: a controlled study. *J Eur Acad Dermatol Venereol*. 2010. Epub ahead of print.
- Esposito M, Saraceno R, Giunta A, Maccarone M, Chimenti S. An Italian study on psoriasis and depression. *Dermatology*. 2006;212:123-7.
- Akay A, Pekcanlar A, Bozdog KE, Altintas L, Karaman A. Assessment of depression in subjects with psoriasis vulgaris in lichen planus. *J Eur Acad Dermatol Venereol*. 2002;16:347-52.
- Juanola X. Factores psicológicos en la espondilitis anquilosante. Estudio de prevalencia y factores determinantes [accessed 22/2/2010]. Available from: [http://www.tesisenxarxa.net/TESIS\\_UB/AVAILABLE/TDX-0629107-122818/01.XJR\\_TESIS.pdf](http://www.tesisenxarxa.net/TESIS_UB/AVAILABLE/TDX-0629107-122818/01.XJR_TESIS.pdf)
- Uguz F, Akman C, Kucuksarac S, Tufekci O. Anti-tumor necrosis factor- $\alpha$  therapy is associated with less frequent mood and anxiety disorders in patients with rheumatoid arthritis. *Psychiatry Clin Neurosci*. 2009;63:50-5.
- Sampogna F, Tabolli S, Soderfeldt B, Axtelius B, Aparo U, Abeni D; the IDI Multipurpose Psoriasis Research on Vital Experiences (IMPROVE) investigators. Measuring quality of life of patients with different clinical types of psoriasis using the SF-36. *Br J Dermatol*. 2006;154:844-9.
- Juanola X, Pallarés C, Valverde J, Sirvent L, García Gómez C, Roig-Escofet D, et al. Ansiedad, depresión y fatiga en la espondilitis anquilosante. Estudio preliminar. *Rev Esp Reumatol*. 2002;29:161-288.
- Dieppe P, Cushnaghan J, Tucker M, Browning S, Shepstone L. The Bristol 'OA500' study: progression and impact of the disease after 8 years. *Osteoarthritis Cartilage*. 2000;8:63-8.
- Lebwohl M, Menter A, Koo J, Feldman S. Case studies in severe psoriasis: a clinical strategy. *J Dermatolog Treat*. 2003;14:26-46.
- Grau A, Comas P, Suñer R, Peláez E, Sala L, Planas M. Evolución de la ansiedad y de la depresión detectada durante la hospitalización en un servicio de Medicina Interna. *An Med Interna*. 2007;24:212-6.
- Pascual MA, Lasheras G, Dexeus D, Rodríguez I, Farré JM, Dexeus S. Impacto en el nivel de ansiedad en mujeres sanas sometidas a ecografía ginecológica transvaginal para detectar patología ovárica: estudio caso-control. *Med Psicosom*. 2007;83:52-7.
- Rodríguez Vega B, Ortiz Villalobos A, Palao Tarrero A, Avedillo C, Sánchez-Cabezudo A, Chinchilla C. Síntomas de ansiedad y depresión en un grupo de pacientes oncológicos y en sus cuidadores. *Eur J Psychiat*. 2002;16:27-38.