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Original investigation

Frequency of ANA and ANA/DFS70 in patients diagnosed with psoriasis compared with healthy population and its association with disease severity

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ABSTRACT

Introduction: Psoriasis (PsO) is a chronic multisystemic disease with an inflammatory phenotype involving skin compromise; PsO has no autoantibodies as biomarkers and is considered a seronegative disease. Otherwise, the correlation with autoantibodies such as antinuclear antibodies (ANA) has been described. Anti-DFS70 antibody presence has been proposed as essential in the exclusion process of systemic autoimmune rheumatic diseases (SARD) as a negative biomarker.

Objective: To evaluate ANA and ANA/DFS70 positivity and the autoantibody profile in a sizeable PsO population compared to healthy controls (HC) and its association with disease severity.

Methodology and methods: A cross-sectional study was carried out in Colombian adult patients with a confirmed diagnosis of PsO and HC. Patient data from the PsO Clinic of the Dermatology Service of the Hospital Militar Central. ANA-HEp2 antibodies were determined by indirect immunofluorescence (IIF). Two confirmatory tests were performed on positive results (pattern AC-2) for the determination of ANA/DFS70-Knocked out for the psip gene) and CytoBead ANA/DFS70 by IIF. Data analysis was evaluated by bivariate statistics based on variables nature and normality tests. Subsequently, a binary logistic regression model was performed. The institutional ethics committee approved the study.

Results: PsO group were 79 patients; 45 (57%) were female, with a mean age of 52.3 ± 17.9 years old, the vulgar PsO presentation was 97.5%, and 13.9% had psoriatic arthritis (PsA). Severe disease (PASI > 10 points) was reported in 11.4%. The total number of positive ANA patients was 35 (44.3%). There was a significant difference between ANA positivity and

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BMI ($p = .045$) and severe disease (PASI > 10) ($p = .036$). ANA positivity in PsO patients with higher ESR (AOR 1.08 CI95% 1.01–1.16 $p = .044$) and an association with PASI > 10 points (AOR 7.34 CI95% 1.14–18.4 $p = .038$). Positive ANAS was present in seven (11.5%) HC. ANAS/DFS70 positivity was observed in only one PsO patient and three HC patients.

Conclusion: The presence of ANAS in patients with PsO is significantly higher compared to the control group and is associated with greater severity of disease, higher levels of inflammatory markers, predominantly titer 1/80, and the AC4-fine granular pattern. The ANAS/DFS70 frequency in PsO patients was low, similar to that described in other references in the literature. The presence of ANAS/DFS70 in HC is confirmed with a higher frequency.

Frecuencia de ANA y ANA/DFS70 en pacientes diagnosticados con psoriasis en comparación con la población sana, y su asociación con la gravedad de la enfermedad

Palabras clave:
Psoriasis
Artritis psoriásica
Anticuerpos antinucleares
ANA/DFS70

RESUMEN

Introducción: La psoriasis (PsO) es una enfermedad multisistémica crónica con un fenotipo inflamatorio que involucra compromiso de la piel, no presenta autoanticuerpos como biomarcadores y se considera una enfermedad seronegativa. Sin embargo, se ha descrito la correlación con autoanticuerpos como los anticuerpos antinucleares (ANA). La presencia de anticuerpos anti-DFS70 se ha propuesto como esencial en el proceso de exclusión de enfermedades reumáticas autoinmunes sistémicas como biomarcador negativo.

Objetivo: Evaluar la positividad de ANA y ANA/DFS70, así como el perfil de autoanticuerpos, en una población con diagnóstico de PsO en comparación con un grupo de controles sanos (CS) y su asociación con la severidad y la calidad de vida de la enfermedad.

Metodología y métodos: Estudio transversal en pacientes adultos colombianos con diagnóstico confirmado de PsO y CS. Los datos de los pacientes provienen de la Clínica de Psoriasis del Servicio de Dermatología del Hospital Militar Central. Los anticuerpos ANA-HEp2 se determinaron por inmunofluorescencia indirecta. Se hicieron 2 pruebas confirmatorias en los resultados positivos (patrón AC-2) para la determinación de ANA/DFS70-Knocked out, para el gen *psip* y CytoBead ANA/DFS70 por inmunofluorescencia indirecta. El análisis de los datos se llevó a cabo mediante estadística bivariada basada en la naturaleza de las variables y las pruebas de normalidad. Posteriormente, se realizó un modelo de regresión logística binaria. El proyecto fue aprobado por un comité de ética institucional.

Resultados: El grupo PsO estuvo conformado por 79 pacientes, 45 (57%) de los cuales eran del sexo femenino, con una edad media de $52,3 \pm 17,9$ años. La presencia de PsO vulgar fue del 97,5%, en tanto que el 13,9% presentaba artritis psoriásica. La enfermedad severa (PASI > 10 puntos) se reportó en el 11,4%. El total de ANA positivos fue de 35 pacientes (44,3%). Hubo una diferencia significativa entre la positividad de ANA, el IMC (p = 0,045) y la enfermedad severa (p = 0,036). La positividad de ANA en pacientes con PsO con mayor VSG (ORA 1,08; IC 95% 1,01-1,16; p = 0,044) y la asociación con PASI > 10 puntos (ORA 7,34; IC 95% 1,14-18,4; p = 0,038). En CS, los ANA positivos fueron 7 (11,5%). En cuanto a la positividad de ANA-DFS70, se observó en solo un paciente con PsO y en 3 CS.

Conclusión: La presencia de ANA en pacientes con PsO es significativamente mayor en comparación con el grupo control y se asocia con una mayor gravedad de la enfermedad, niveles más altos de marcadores inflamatorios, en particular el título 1/80, y el patrón granular fino AC-4. La frecuencia de ANA/DFS70 en pacientes con PsO fue baja, similar a lo descrito en otras referencias de la literatura. La presencia de ANA/DFS70 en CS se confirma con mayor frecuencia.

Introduction

Psoriasis (PsO) is a chronic multisystemic disease with inflammatory phenotype that involves skin compromise due to the persistent activation of the impermeable system, mainly due to T lymphocytes and antigen-presenting cells.[1] PsO pathogenesis is influenced by genetic, epigenetic, and environmental factors.[1] PsO has been considered a disease mainly autoinflammatory with no autoantibodies as biomarkers, and it is considered a seronegative disease, otherwise, the correlation with autoantibodies such as antinuclear antibodies (ANA) has been described.[2]

The detection of ANA can facilitate the diagnosis of patients with diseases associated with autoimmunity, however, it has been seen that the positivity of the test can also be present in patients with a history of autoimmune diseases in first-degree relatives of consanguinity, in patients who are consuming some medication or even have been positive for years without necessarily developing an autoimmune disease.[3,4] Positive ANA finding in the absence of physical signs and symptoms has limited diagnostic utility.[4]

Additionally, Anti-DFS70 antibodies is a new pattern (AC-2) that produces a dense-appearing fine speckled pattern at the nuclear level in immunofluorescence (DSF70) in HEp-2 cells.[5] Anti-DFS70 antibodies presence has been evidenced in patients with atopic diseases, alopecia areata, ocular diseases, chronic fatigue syndrome, arthralgia, fibromyalgia, interstitial cystitis, prostate cancer, Bechet's disease, and autoimmune thyroiditis.[6–8] Its presence has been reported in up to 11% of apparently healthy controls (HC) in a wide range of titers.[9,10] Anti-DFS70 presence has been proposed as essential in the exclusion process of systemic autoimmune rheumatic diseases (SARD) as a negative biomarker.[10–13]

In Colombia, anti-DFS70 has been previously described; a comparison between systemic lupus erythematosus (SLE) and HC, evidenced the presence of a higher frequency of positive anti DFS70 in HC 33.3% compared to 12.5% in SLE ($p = 0.005$).[14] ANA/DFS70 was measured in patients with rheumatoid arthritis (RA), first-degree relatives of RA, and HC, residents in Bogota, identifying antibodies in 0%, 1.7%, and 2.5%, respectively. Likewise, there was an association with a standard erythrocyte sedimentation rate (ESR) ($p = 0.032$), negative rheumatoid factor (RF) ($p = 0.044$), and absence of painful joint count ($p = 0.039$).[15] In a complementary manner, an additional analysis was performed (unpublished data), evaluating ANA/DFS70 in patients with mixed connective tissue disease (UCTD) with evidence of a positive result in 11.9%. Positive patients were older than 50 years, had a disease duration greater than 5 years, and had a predominance of articular and dry ocular and oral symptoms.[16] In PsO ANA positivity has been reported in 16.9%,[17] there is ANA/DFS70 scarce information although LEDGF/DFS70 expression has been demonstrated in psoriatic tissues.[18]

Therefore, the purpose of this study was to evaluate ANA and ANA/DFS70 positivity and the autoantibody profile in a large PsO population compared to HC and its association with the severity of the disease.

Methods

Population and clinical evaluation

This was a cross-sectional descriptive study including patients who were clinically and histopathological diagnosed with PsO between the years 2014 and 2016.

Psoriasis

The inclusion criteria for patients with PsO were patients between 18 and 65 years old who met the updated criteria of the 2012 Colombian Consensus of PsO and signed informed consent.[1] Specifically, patients with plaques clinically suggestive of psoriasis confirmed by a dermatologist or skin biopsy. For each patient, we used the Psoriasis Area and Severity Index (PASI) (>10 points) and Dermatology Life Quality Index (DLQI) to determine clinical severity and impact on quality of life (>11 points).[19,20] The exclusion criteria were having any additional autoimmune disease, autoinflammatory disease, infectious diseases, neoplasms, diabetes, or being under pregnancy or lactation at inclusion time. Patients were evaluated in the ambulatory consultation of the Dermatology department of the Hospital Militar Central from Bogotá, Colombia.

Healthy control

The HC group consisted of people between 18 and 65 years old who lived in same geographical region. The exclusion criteria were having a blood relationship with patients with autoimmune disease, autoinflammatory disease, infectious diseases, neoplasms, diabetes, or being under pregnancy or lactation state at inclusion time. The individuals were invited to participate from Bogotá, Colombia.

Evaluation of ANA and ANA DFS-70 autoantibodies and inflammatory markers

ANAs determination was performed using the indirect immunofluorescence IIF technique; the serum was reacted on the slides with the substrate HEp-2 1103 and HEp-2-DFS70 REF 1108, autoantibody test System IMCO Diagnostics ®, knocked out, for the PSIP gene, which prevents binding sites for the 70 kDa protein recognized by these autoantibodies. These modified cells can recognize all other autoantibodies except DFS70. An initial dilution of 1/80 was made up to the final titer, with those samples with fluorescence being positive with the pattern of dense, fine granular staining in the nucleoplasm of the interphase cell (AC-2) (Fig. 1A), typically excluding the nucleoli with bright staining of the chromosomes in mitotic cell phase. Each test was performed with their respective positive and negative controls. The confirmatory tests for ANA/DFS70 (Autoantiboy test System Imco Diagnostics ® REF 1108) and CytoBead ANA ref 8260 ® were tested in all samples (Fig. 1B – positive results and 1C – negative results). Microscope readings Mi5 Lumin Epi-Fluorescence.

For proper conservation, the ANA kits were stored at a temperature of 2–8 °C, according to the manufacturer's recommendations. The samples were read by two experts

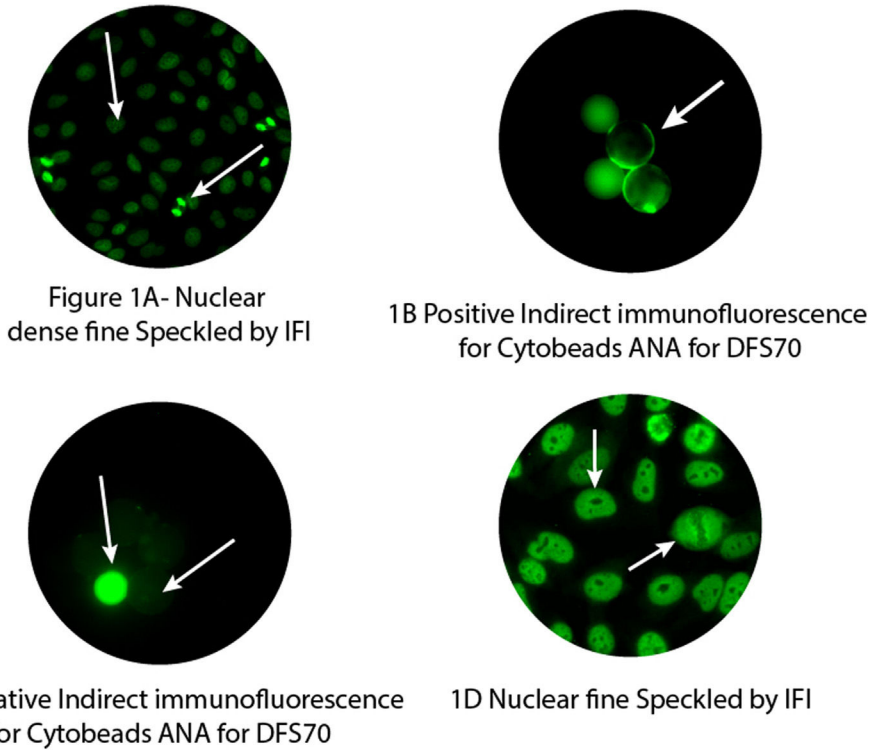

Fig. 1 – ANA and ANA/DFS70 in patients with psoriasis population by Indirect immunofluorescence technique. (A) Nuclear dense fine Speckled by IFI. AC-2 Speckled pattern distributed throughout the interphase nucleus with characteristic heterogeneity in the size, brightness and distribution of the speckles. Throughout the interphase nucleus, there are some denser and looser areas of speckles (very characteristic feature), typically excluding the nucleoli with bright staining of the chromosomes in mitotic cell phase. 40×. (B) Positive Indirect immunofluorescence for Cytobeads ANA for DFS70. Positive antibodies in diluted patient samples react specifically in the first step with antigens on beads fixed onto slides/Cytobeads ANA for DFS70. Ring fluorescence of the antigen coated beads shows the presence of DFS70. 40×. (C) Negative Indirect immunofluorescence for Cytobeads ANA for DFS70. The absence of ring fluorescence of the antigen coated beads shows a negative result regarding this antibody. Only fluoresces the Reference beads (Control). 40×. (D) Nuclear fine Speckled by IFI. AC-4 Fine tiny speckles across all nucleoplasm. The nucleoli may be stained or not stained. Mitotic cells have the chromatin mass not stained. 40×.

independently. Nomenclature used were according to ICAP consensus classification 2015.[21]

RF was measured using nephelometry (negative < 20UI) (Beckman Coulter, Immage 800®, Brea, CA, USA). ACPAs were measured using ELISA (Negative < 20 E/mL) (Quanta lite® CCP 3.1 IgG/IgA, INNOVA Diagnosis, San Diego, CA, USA). ESR was measured using a stopped-flow technique in a capillary microphotometer (Normal < 20 mm/h) (Alifax® Test 1 System, Polverara, Italy), and hs-CRP was measured using a chemiluminescent enzyme immunometric assay in an IMMULITE 1000 Automated Analyzer, Siemens®, Erlangern, Germany, respectively), Normal levels were considered less than 3 mg/L. All assays were made according to the manufacturer's instructions.

Statistical analysis

A cross-sectional study with an analytical component was carried out among a cohort of patients over 18 years of age with a confirmed diagnosis of PsO and HC. A descriptive statistical analysis of the categorical variables in percentages and quantitative variables measured by central tendency according to the characteristics of variables was performed based on normality with Kolmogorov–Smirnov test. A comparison between groups was made using the Chi-square test or Fisher's exact test for qualitative variables, and Mann–Whitney's or *T*-student test or ANOVA or *U*-Mann–Whitney test for quantitative variables based on normality results. Subsequently, a binary logistic regression model was carried out, evaluating independently the factors related to the presence of ANA. Variables were considered those with a value of $p < 0.05$ or with biological plausibility for the regression analysis, the values of the probability were calculated as adjusted OR (AOR). The analyzes were performed using the statistical program SPSS 26. *p*-Values were considered statistically significant with a result of <0.05.

Ethical considerations

The study was conducted in accordance with the Declaration of Helsinki, and the study was ap-proved by an investigation committee and the Hospital Militar Central Ethics

Table 1 – Clinical characteristics of patients with psoriasis.

	n (%)
Age mean ± SD	52.3 ± 17.9
Women	45 (57)
BMI mean ± SD	26.5 ± 4.1
Current smoking	7 (8.9)
Past smoking	36 (45.6)
Psoriasis	68 (86.1)
Psoriatic arthritis	11 (13.9)
Vulgar	77 (97.6)
Guttata	1 (1.2)
Pustulous	1 (1.2)
Nail involvement	
Pitting	12 (15.2)
Oil drop sign	6 (7.6)
Comorbidities	34 (43)
Severity	
Mild–moderate	64 (81)
Severe	15 (19)
PASI	
<10	70 (88.6)
>10	9 (11.4)
DLQI	
No effect	30 (38)
Small effect	20 (25.3)
Moderate effect	19 (24.1)
Very large effect	9 (11.4)
Extremely large effect	1 (1.2)
CRP median (IQR)	2.5 (0.9–5.3)
ESR median (IQR)	5 (3–10)
anti CCP	1 (1.2)
RF	0 (0)
Treatment	
Topical	48 (60.8)
Methotrexate	22 (27.8)
Sulfasalazine	1 (1.2)
Anti TNF alpha	11 (13.9)
Anti-IL-17	3 (3.8)
PUVA therapy	3 (3.8)

BMI: body mass index; CRP: C reactive protein; ESR: eritrosedimentation rate; anti CCP: cyclic citrullinated peptide antibody; anti TNF alpha: anti tumor necrosis factor alpha; PUVA: psoralen and UVA.

Committee (Code ref: HMC 2019-004). Informed consent was obtained from all subjects involved in the study.

Results

PsO group were 79 patients, 45 (57%) were female, they had a mean age of 52.3 ± 17.9 years old, and 60.8% were married. Current cigarette consumption was 8.9%. The history of previous cigarette consumption was 45.6%, and 43% had additional comorbidity. The body mass index (BMI) was 26.5 ± 4.0 (Table 1).

PsO patients had a vulgar presentation up to 97.5%, while pustulous and guttata were present in 1.3%, each. Nail involvement was reported in 22.8% and pitting in 15.2%. 13.9% had psoriatic arthritis (PsA), and oral manifestations such as fissured tongue were present in 53.2%. Regarding inflammatory markers, ESR was abnormal (>20 mm/h) at 10.1% and CRP high at 45.5%(>3 mg/L), none was positive for RF and one was positive for anti-CCP. Clinimetric evaluation included PASI with a score median 3 IQR 1–6, PASI-3 46.8%, PASI-4 39.2%, and PASI-5 30.4%. The severe disease (PASI > 10 points) was reported in 11.4%. Quality of life measured with DLQI with a median score of 3 IQR 1–7, was altered by 13.9% (no effect on patient's life 38%, small effect 25.3%, moderate effect 24.1%, very large effect 11.4%, and extremely large effect 1.3%) DLQI for high impaired of quality of life was 13.9% (DLQI > 11 points). Topical treatment was used in 60.8%, and PUVA (psoralen and UVA) therapy in 3.8%. Systemic use of disease-modifying drugs as methotrexate was 26.7% meanwhile, sulfasalazine was 1.3%. Biological therapy was used in 17.7% (78.6% anti-TNF alpha inhibitors and 21.4% IL-12/23 or IL-17 Inhibitors).

The total number of positive ANA was 35 patients (44.3%) (Fig. 2A). Of the patients with positive ANA, 18 patients had titers of 1/80 (22.8%), 3 patients with titers of 1/160 (3.8%), and 14 patients with titers of 1/320 (17.7%). The patterns identified were fine speckled AC-4 in 17 (21.5%) (Fig. 1D), cytoplasmic fibrillar linear AC-15 in 6 (7.6%), large speckled AC-5 in 5 (6.3%), homogeneous AC-1 in 5 (6.3%), homogeneous nucleolar AC-8 in 1 (1.3%), and dense fine speckled AC-2 only in 1 (1.3%).

There was a significant difference between ANA positivity and higher BMI ($p = 0.045$), as well as ANA positivity and severe disease (PASI > 10) ($p = 0.036$). Pattern analysis reported large, speckled AC-5 was higher in smoking history ($p = 0.017$), cytoplasmic AC-15 was higher in PASI-4 ($p = 0.032$) and PASI > 10 ($p = 0.018$), finally ANA 1/160 titer ($p = 0.019$) was higher in patients with methotrexate use. Logistic regression analysis adjusted by age and gender identified an association of ANA positivity in PsO patients with higher ESR (AOR 1.08 CI95% 1.01–1.16 $p = 0.044$) and an association with PASI > 10 points (AOR 7.34 CI95% 1.14–18.4 $p = 0.038$).

Although in Latin American cohorts, positivity for anti-CCP has been described in 17.5% of patients with PsOP and 20.9% of patients with PsA,[22] the patient with anti-CCP positive had no joint involvement at the time of the study, the absence of familial autoimmunity, rheumatoid factor, and ANAS/DFS70 negative results, therefore, the clinical presentation is not delved as it is not related to the objective of the study.

HC group were 61 participants, 27 (44.3%) were female, they had a mean age of 45.1 ± 13.4 years old, and 52.8% were married. Current cigarette consumption was 8.2%. The history of previous cigarette consumption was 29.5%. The body mass index (BMI) was 25.4 ± 3.4. Therefore, a comparison between PsO and HC was performed matched by age and gender, with no significant differences among variables with the exception of CRP positivity ($p = 0.007$), anti CCP ($p = 0.032$), and ANA positivity ($p < 0.001$).

In HC for ANA by the IIF technique positive result was seven (11.5%), Fig. 2B, six presented titers of 1/80, and one titer of 1/320. Regarding the patterns, they presented the following distribution: Fine granular pattern in three subjects, one with a nucleolar pattern, and three with dense fine granular. As for ANA/DFS70 positivity, it was present in three patients.

Regarding the positivity of ANA/DFS70, it was observed in only one PsO group with the following characteristics: a male 43 years old, without a history of cigarette consumption. The clinical assessment reported cutaneous involvement, with no

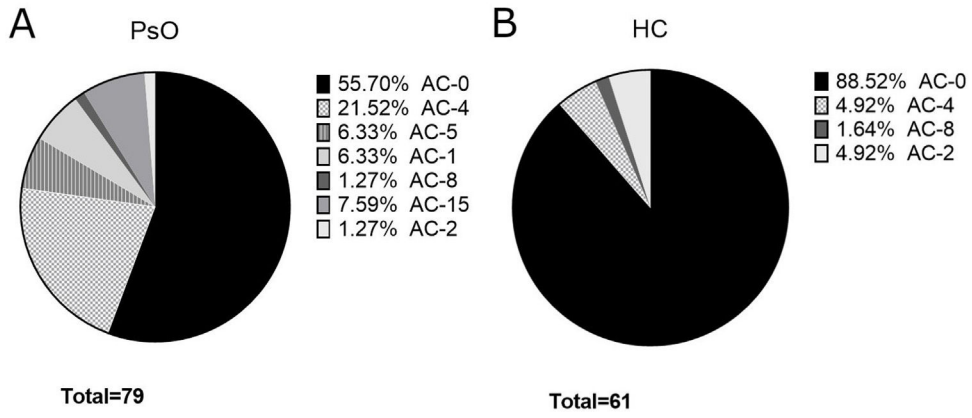

Fig. 2 – (A) Frequency of ANA and ANA/DFS70 in patients with psoriasis population by indirect immunofluorescence technique. (B) Frequency of ANA and ANA/DFS70 in patients with healthy population by indirect immunofluorescence technique. AC-0: Negative, AC-1: homogeneous, AC-2 (DFS-70): dense fine speckled, AC-4: fine speckled, AC-5: large speckled, AC-8: nucleolar, AC-15: cytoplasmic. Nomenclature according to ICAP consensus classification 2015.

evidence of a joint compromise or any other comorbidity. Regarding treatment, he was receiving biological Anti-TNF as treatment and had adequate control of PASI and DLQI with levels less than 10. In relation to the characteristics of the HC with the positivity of ANA/DFS70, they had a mean of 44 years old, two men and one female; none smoked and only one had a personal history of cigarette consumption.

Discussion

PsO and PsA arthritis are immune-mediated inflammatory diseases that share clinical, immunological, and genetic characteristics.[1] Autoantibodies, as detected by the IIF on HEp-2 cells, are recognized as critical diagnostic markers in many autoimmune diseases, particularly systemic autoimmune rheumatic diseases (SARD). However, it is essential to highlight that ANA has a high prevalence in relatively low titers in a healthy population. In the study by La Rosa Blass et al., published in 2017 in Peru, 150 HC were included, where the presence of ANA was determined using the IIF technique, and a prevalence of 10.7% was observed, with a predominance of the females, 56.2%.[3] Compared with our results, in the group of HC, ANA were positive in a total of 11.5% (7 b HC), which is relatively similar to the data reported.

The presence of ANA positivity in PsO is variable from no patients as reported by Rosenberg et al.[23] to 33%, similar to data reported in our population with 44.3%. Meanwhile, they reported 77% ANA positivity under anti-TNF therapy.[24] In PsA, prior biological treatment had been reported up to 52% (>1/100), most in women. There is a tendency to be associated with peripheral compromise,[25] similarly to data reported in other PsA cohorts, 47% (>1/40) and 14% (>1/80) in Canada,[26] and 13.5% in PsA patients from United Kingdom,[23] in our population, only 13.9% have a PsA diagnosis. There was 45.5% ANA positivity among them with no significant differences; this patient's 54.5% were on biological therapy.

Regarding the presence and association of ANA in patients with PsO Singh P et al. in India, ANA positivity was 28.8%; meanwhile, in the same study, PsA were all negative. The presence of positive ANA was 57% in men compared to 42.9% in women, and the predominant clinical presentation was PsO Vulgaris.[17] In our study, we observed that, of 79 patients with PsO, 35 patients presented positive ANA with a frequency of 44.3%, which is higher than reported in the Indian study. Additionally, positive ANA was similar between gender (45.5% in men and 44.4% in women).

However, previous studies of both PsO and PsA have shown that ANA detected by IIF is prevalent in patients with PsO who have not yet received treatment with biological agents, and even their frequency or titers may increase in association with the application of some biological treatment established.[17,27,28] Some studies have not only detected increased levels of ANA but have also shown an increase in the count of eosinophils.[29] About the results obtained in our study of the total number of patients with PsO, 8.9% ($n = 7/35$) had positive ANA and were also undergoing biological treatment, where four had titles of 1/80, one title of 1/160, and two with titles of 1/320. Regarding the type of biological treatment, they were receiving, it was observed that six patients were receiving treatment with Anti-TNF, and one was receiving anti-interleukin IL-17.

In a study published in 2018 by Miki M et al., 20 patients with PsO in biological treatment for at least 6 months, whose distribution was as follows: 14 patients in treatment with Anti TNF and 6 patients with Anti IL-12/23. Seroconversion was defined as an increase in titers 4 times higher than those presented before the beginning of biological treatment. There was evidence of an increment in titers between 75% and 100%. ANAS positivity was 16% and 100% in patients with Adalimumab and Infliximab, respectively. Patients with Ustekinumab had no changes in ANA titers.[28] Therefore, these results support the findings of ANA positivity in patients with biological treatment with Anti-TNF; however, it is essential to mention that among the statistically significant effects found in our study, the conventional treatment with methotrexate was positive for ANA with titers of 1/160, unlike the titers previously described with the consumption of biological agents in

our population it was not related maybe due to small sample size.

Severity of PsO (PASI > 10) nine patients (11.4%), seven had positive ANAs. In multivariate analysis, it was associated with an AOR of 7.34; this finding is relevant but must be evaluated in larger sample populations due to high confidence interval amplitude. Hoffman et al. reported the presence of ANA in PsO patients with Adalimumab,[30] but the presence of ANA did not correlate with PASI scores. The influence of ANA on disease activity must be further evaluated in other populations.

In 101 patients with PsO, 100 with PsA, and 50 HC detected, ANA/DFS70 in 6.5% was the most common ANA pattern,[27] Interestingly anti DFS70 was correlated with female predominance, lower PASI, and no previous treatment or use of biological therapy. Compared with our study, we observed ANA/DFS70 was only 1.2%, but no additional analysis was performed due to low frequency.

Prevalence reports of ANA/DFS70 in the literature mainly include Asian, European, and North American populations, but few data are available for the Hispanic population. In Mexico, the prevalence of anti-DFS70/LDEGFp75 in HC was 17.4%, diabetes was 1.4%, and obesity was 6.6%; interestingly, in RA patients, it was reported positivity in 4.3%. The study from Mexico had an additional confirmation of ANA/DFS70 with ELISA and western blot, as well as a chemiluminescence assay with a slight variation in positivity rate.[31]

In Colombia, in 100 SLE patients, 102 systemic autoimmune diseases (SARD), 200 HC, and 56 subjects were suspected of having an autoimmune disease with ANA positive and negative anti-ds-DNA antibodies. Anti-DFS70 antibodies were positive in 1.8% of subjects with ANA positive/anti-DNA negative, 1% in SLE patients, 0.9% of patients with other SARDs, and 0.5% HC[32]. In the study carried out by Verónica Romero et al. in 2021, in our institution, the frequency of ANA in the HC was 25.8%, 43% in patients with RA, and 30% in RA blood relatives, which compared to our results, in a HC the frequency was only 11.5%.[15] Likewise, in a patient with RA, no ANAS/DFS70 result was positive. Data from Colombia[14–16] showed evidence of a higher frequency of positive Anti-DFS70 in HC compared with SLE showed a higher frequency of positive Anti-DFS70 in HC than in SLE and RA patients. This is a higher value than that found in our mestizo Colombian population; previous reports informed a low frequency of ANA in the Colombian population in HC of 2.9%.[33] However, the earlier results in other groups showed a higher value than in our HC mestizo Colombian population. We found similar findings in our study, where the total positive population for ANA/DFS70 was 1.2% in PsO and 4.9% in individuals in the healthy population.

As limitations, the study design does not inform prospective effects, so it is worth monitoring the levels of ANA and ANA/DFS70 before and after treatment to evaluate its behavior over time, as well as the influence of systemic therapies in these patients. Additionally, due to the small sample size, the findings must be assessed in large populations. But to our knowledge, this is the first report of ANA/DFS70 in Colombian patients diagnosed with PsO.

Conclusion

The presence of ANAS in patients with PsO is significantly higher compared to the control group and is associated with greater severity of the disease, higher levels of inflammatory markers, predominantly titer 1/80, and the AC4-fine granular pattern. The ANAS/DFS70 frequency in PsO patients was low, like that described in other references in the literature. The presence of ANAS/DFS70 in HC is confirmed with a higher frequency.

Conflicts of interest

The authors declare no conflict of interest, financial or otherwise.

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Supplementary material

The Spanish translation of this article is available as supplementary material.

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