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Original article

Prevalence of Psoriatic Arthritis among Psoriatic Patients in Damietta Governorate

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ABSTRACT

Background: Psoriasis is a chronic inflammatory skin disease affecting approximately 1-6% of population in the world.

Aim of the work: To screen psoriatic patients for psoriatic arthritis [PsA] to improve optimal PsA management and outcome.

Patients and Methods: This study included one hundred and tow patients with psoriasis recruited from the dermatology outpatient clinics in Damietta, [Al-Azhar University Hospital, Dermatology and Leprosy Hospital and El-Maasarah Hospital]. Patients should fulfill a Simple Psoriatic Arthritis Screening Questionnaire [SiPAS] to calculate the prevalence of psoriatic arthritis among psoriatic patients in Damietta.

Results: The study included 42 [41.2%] females and 60 [58.8%] males with age range between 6 -88 years old with mean age 45 years old. Among the 102 included patients with psoriasis, 36 patients [35.3%] had score [≥3]; [63.9%] of them were men and [36.1%] were women with mean age 51 years old, mean age of onset of psoriasis 31 years old and mean duration of psoriasis 19.14 . [77.8%] of them had psoriatic nail lesions. On the other side, 66 patients [64.7%] had score [<3] with mean age 45.19 years old, mean age of onset of psoriasis 32 and mean duration of psoriasis 9 years.

Conclusion: Early diagnosis of PsA could prevent permanent joint damage or spinal fusion and could improve long-term patient outcome. The SiPAS questionnaire can be a powerful tool to help dermatologists to quickly screen PsA during their clinical practice. The SiPAS questionnaire is able to quickly screen psoriasis patients for PsA. A SiPAS score ≥3 is an indication for referral to a rheumatologist.

Keywords: Psoriasis; Psoriatic arthritis; Screening; Questionnaire; Damietta.

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INTRODUCTION

Psoriasis is a chronic inflammatory skin disease affecting approximately 1-6% [Mean 3%] of population in the world. Two age peaks of onset was considered for the disease; the early age of onset between 16-22 years, and the late age of onset is between 57-60 years [1].

There are several classes of psoriasis including: psoriasis vulgaris, guttate psoriasis, generalized pustular psoriasis, disseminated erythrodermic psoriasis, scalp psoriasis, palm and sole psoriasis, nail psoriasis, arthropathic psoriasis, and inverse psoriasis [2]

Psoriatic arthritis prevalence among psoriatic patients varies widely and increases with time since psoriasis diagnosis, reaching 20.5% after 30 years[3]

The potential risk of tissue destruction associated with PsA triggered efforts aimed at improving treatment strategies[4].

Tight control of PsA was shown to significantly improve joint outcomes for only PsA patients when compared to standard care protocols.

Skin predictors of PsA have been identified in patients with psoriasis: scalp involvement, nail dystrophy, intergluteal and perianal lesions as well as large body surface area involvement. These predictors are well known to dermatologists[5]

AIM OF THE WORK

The aim of the present study was to screen psoriatic patients for signs and symptoms of psoriatic arthritis to improve optimal PsA management and outcome.

PATIENTS AND METHODS

Patients: This study included one hundred and tow patients with psoriasis, who were recruited from the dermatology outpatient clinics in Damietta, [Al-Azhar University Hospital], Dermatology and Leprosy Hospital and El-Maasarah Hospital.

All selected individuals were enrolled in the study after an informed consent was obtained from all participants after taking the approval of Research Ethics Committee of the previously mentioned hospitals in Damietta. Patients were selected according to the following inclusion and exclusion criteria.

Inclusion criteria: All psoriatic patients who accepted to participate in this study.

Exclusion criteria: patients with diseases other than psoriasis were excluded. Additional exclusion criteria were as the following: other inflammatory rheumatologic conditions [e.g. gout, calcium pyrophosphate dehydrate crystal deposition, rheumatoid arthritis], medical comorbidity that would render the patient unable to participate fully in study procedures [e.g. terminal conditions such as end-stage renal disease, heart failure, or malignancy], major cognitive deficits or psychiatric symptomatology that would preclude questionnaire completion.

Methods: The following data were registered for each of studied subjects: Demographic data [age and sex]; Disease related data [age of psoriasis disease onset, duration of disease, nail involvement, location of skin affected [scalp, groin, back] and site of affected joint].

Patients filled a Simple Psoriatic Arthritis Screening Questionnaire [SiPAS]: which was suitably modified and translated into local [Arabic] language. The five screening questions are: Have you ever had a finger or a toe and /or another joint swollen and painful without any apparent reason? Occasionally, has an entire finger or toe become swollen, making it look like “sausage”? Do you wake up at night because of low back pain? Have you had pain in your heals? Has a doctor ever diagnosed you with psoriatic arthritis? For dermatologists: score 1 point to each question answered yes. A SiPAS score ≥ 3 is an indication for referral to rheumatologist [6]

Statistical analysis of the data: Data were fed to the computer and analyzed using International Business Machines [IBM] Statistical package for social science [SPSS] software package version 20.0**.** **[**Armonk, NY: IBM Corp**]** Qualitative data were described using number and percent. Quantitative data as mean, median and standard devation. The used tests were: Chi-square test: For categorical variables, to compare between different groups. Fisher’s Exact or Monte Carlo correction: Correction for chi-square when more than 20% of the cells have expected count < 5.

RESULTS

In the present study, positive SiPAS score was reported in 36 patients [35.3%] and the score was negative in 66 patients [64.7%]. The SiPAS score ranged from 0 to 5; the median value was 2 [Table 1]. Results of the present work revealed that, there was no significant difference between positive and negative SiPAS score groups as regard to patient gender. However, patients with positive score were significantly older in age [51.11±16.26 vs 41.95±18.73 years respectively] [Table 2]. The duration of psoriasis was significantly longer in cases with positive SiPAS when compared to cases with negative SiPAS score [19.14±9.85 vs 9.11±8.10 years respectively] [Table 3]. In addition, nail involvement was significantly higher among patients with positive SiPAS when compared to those with negative SiPAS [77.8% vs 39.4% respectively] [Table 4]. Finally, table [5] depicts the results of the questionnaire.

Table [1]: Distribution of the studied cases according to SiPAS score [n = 102]

SiPAS Score	No.	%
-ve [<3]	**66**	**64.7**
0	19	18.6
1	19	18.6
2	28	27.5
+ve [≥3]	**36**	**35.3**
3	23	22.5
4	12	11.8
5	1	1.0
Min. – Max.	0.0 – 5.0	
Mean ± SD.	1.93 ± 1.31	
Median	2.0	

Table [2]: Comparison between the two studied groups according to demographic data.

	Total [n=102]		SiPAS Score <3 [-ve] [n = 66]		SiPAS Score ≥3 [+ve] [n = 36]		Test of sig.	P
	No.	%	No.	%	No.	%		
Sex								
Male	60	58.8	37	56.1	23	63.9	χ^2= 0.589	0.443
Female	42	41.2	29	43.9	13	36.1		
Age [years]								
<11	7	6.9	5	7.6	2	5.6		
11 – 30	13	12.7	12	18.2	1	2.8	χ^2= 7.617*	MCp= 0.048*
> 30 – 60	57	55.9	37	56.1	20	55.6		
>60	25	24.5	12	18.2	13	36.1		
Min. – Max.	6.0 – 88.0		6.0 – 88.0		9.0 – 73.0		U= 837.50*	0.014*
Mean ± SD.	45.19 ±18.35		41.95 ±18.73		51.11 ±16.26			
Median	48.50		41.50		52.0			

χ^2: **Chi square test;** MC: **Monte Carlo; U: Mann Whitney test;** *: Statistically significant at p ≤ 0.05

Table [3]: Comparison between the two studied groups according to duration of psoriasis.

	Total [n=102]		SiPAS Score <3 [-ve] [n = 66]		SiPAS Score ≥3 [+ve] [n = 36]		Test of sig.	p
	No.	%	No.	%	No.	%		
Duration of psoriasis [years]								
<1	2	2.0	2	3.0	0	0.0	χ^2=35.353*	MCp <0.001*
1 – 12	55	53.9	49	74.2	6	16.7		
>12	45	44.1	15	22.7	30	83.3		
Min. – Max.	0.50 – 43.0		0.50 – 38.0		3.0 – 43.0		U= 441.50*	<0.001*
Mean ± SD.	12.65 ± 9.95		9.11 ± 8.10		19.14 ± 9.85			
Median	10.0		7.0		16.50			

χ^2: **Chi square test; U: Mann Whitney test;** *: Statistically significant at p ≤ 0.05

Table [4]: Comparison between the two studied groups according to nail involvement.

Nail involvement	Total [n=102]		SiPAS Score				χ^2	p
			<3 [-ve] [n = 66]		≥3 [+ve] [n = 36]			
	No.	%	No.	%	No.	%		
No	48	47.1	40	60.6	8	22.2	13.776*	<0.001*
Yes	54	52.9	26	39.4	28	77.8		

χ^2: **Chi square test;** *: Statistically significant at $p \leq 0.05$

Table [5]: Distribution of the studied cases according to different parameters [n=102].

	No.	%
Have you ever had a finger or toe and /or another joint swollen and painful without any apparent reason?	70	68.6
Occasionally, has an entire finger or toe became swollen, making it look like a sausage?	22	21.6
Do you wake up at night because of low back pain?	55	53.9
Have you had pain in your heels?	49	48.0
Has a doctor ever diagnosed you with psoriatic arthritis?	1	1.0

DISCUSSION

Psoriasis is a chronic inflammatory immune mediated multisystem disease that shows predominantly skin and joint affection. It is a lifelong disease with remissions and exacerbations with psoriasis vulgaris as the most common type of psoriasis [7]

Psoriatic arthritis is most commonly a seronegative oligoarthritis found in patients with psoriasis, with less common, but characteristic, differentiating features of distal joint involvement and arthritis mutilans[8]

Psoriasis appears to precede the onset of psoriatic arthritis in 60-80% of patients [occasionally by as many as 20 years, but usually by less than 10 years]. Results from the Multinational Assessment of Psoriasis and Psoriatic Arthritis Survey [MAPP] showed that 44% of patients with psoriasis reported having joint pain, and ~33% of these patients reported having symptoms resembling enthesitis and/or dactylitis[9]

In this study we applied the SiPAS questionnaire on psoriatic patients in Damietta to screen them for the presence of PsA and identify the prevalence of it. In this study, 41.2% of studied group were women and 58.8% were men. Hence, the prevalence of PsA in Damietta was estimated to be 35.3%. [63.9%] of them were men and [36.1%] were women. With mean age 51 years old and mean age of onset of psoriasis 31.97 years old and mean duration of psoriasis. [77.8%] of them had psoriatic nail lesions. Among the patients diagnosed with PsA, the 100% answered "yes" at least in one of the five items. [63.88%] put at least three "yes", and [33.33%] wrote up four "yes". Only one patient placed five "yes".

On the other hand, in the patients without PsA, [64.7%], [56.1%] of them were males and [43.9%] were females. With mean age 45 years old, mean age of onset of psoriasis 32 years old and mean duration of psoriasis 9 years old. [28.78%] replied zero "yes", [28.78%] put at least one "yes", [42.42%] replied at least two "yes".

PsA was diagnosed in almost one third of psoriasis patients, and of these, 41% had not been aware they had PsA before participating in the study. Similarly, a French study showed that up to 29% of patients with psoriasis seen by dermatologists have undiagnosed PsA. The challenge is to identify early those subjects with musculoskeletal disease. Dermatologists are requested to interview patients with few key questions regarding peripheral inflammatory pain, axial inflammatory pain, entheseal involvement or dactylitis, in order to uncover evidence of PsA and prompt a subsequent rheumatologic referral, and to date many validated screening questionnaire are available [10]

More recently different works directly compared questionnaires with the aim to identify one questionnaire that can be recommended for routine clinical use [11]

Early diagnosis of PsA could prevent permanent joint damage or spinal fusion and could improve long-term patient outcome. Unfortunately, delay in diagnosis is quite common: 27% of early PsA patients has erosions at the time of diagnosis [12]

Several factors contribute to the delay in the diagnosis of PsA. The lack of awareness among patients of the relationship between skin disease and joint symptoms and the absence of a specific diagnostic marker are the main. However, it is not possible that for all psoriasis patients to be evaluated by a rheumatologist [13,14], and time constraints on many dermatologists might preclude routine questioning regarding joint symptoms.

In SiPAS questionnaire validation study; authors aimed to develop and validate a new easy, quick, and well working PsA screening tool. The preliminary analysis attempted to identify the most discriminatory questions from any of the available questionnaires, starting from the opinion of the experts. The study selected five items with marked percentages of choices among rheumatologists and dermatologists [6]

The SiPAS questionnaire can be a powerful tool to help dermatologists to quickly screen PsA. Based on the available literature and our personal experiences, we considered useful the development of a mobile phone app of SiPAS questionnaire, called “SiPAS calculator”, to simplify and assist the dermatologist during his clinical practice. [6,16]

In the SiPAS questionnaire validation study; 42.07% of the studied group were women and 57.93%were men, with a mean age of 49 years were evaluated thought to not have PsA. Hence, the prevalence of PsA in their population was estimated to be 30.69%. Among the patients diagnosed with PsA, the 100% answered “yes” at least in one of the five items. [95.16%] filled in at least two “yes”, [79.03%] put at least three “yes”, and [27.41%] wrote up four “yes”. No patient placed five “yes”. On the other hand, in the patients without PsA, [36.42%] replied zero “yes”, [63.57%] put at least one “yes”, [37.14] replied at least two “yes”, [11.49%] answered at least three “yes”, while [2.86%] placed four “yes”. No psoriasis patient without articular disease filled in five “yes”. The disease probability was based on the self-reported presence of signs and symptoms of PsA that could be related to the questions about joint pain/swelling [item 1], dactylits [item 2], inflammatory back pain [item 3], entheseal involvement [item 4] and previous diagnosis of arthritis [item 5][6].

In conclusion, early diagnosis of PsA could prevent permanent joint damage or spinal fusion and could improve long-term patient outcome. In conclusion, the SiPAS questionnaire can be a powerful tool to help dermatologists to quickly screen PsA during their clinical practice.

Conflict of Interest

Authors declare that, there was no conflicts of interest.

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