Research Article

International Journal of Clinical & Experimental Dermatology

A Preliminary Clinical Study on 100 Egyptian Psoriatic Patients

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Submitted: 22 Nov 2016; **Accepted**: 01 Dec 2016; **Published**: 04 Dec 2016

Abstract

Background: *Psoriasis is a chronic, immune-mediated, inflammatory condition frequently seen in the clinical practice with a reported prevalence of 0.6 to 4.8 percent in the general population. However, data on psoriasis in Egypt are scarce. So, our aim was to investigate the clinical characterization of psoriasis in 100 Egyptian patients.*

Method: *One hundred Egyptian psoriasis patients were enrolled in this study. A detailed questionnaire was filled including demographic and clinical aspects of the disease. Some laboratory tests were done to search for associated diseases like diabetes, metabolic syndrome and hepatitis C virus (HCV) and to correlate them with the disease severity. The collected data were analyzed by SPSS version 17.*

Results: *Thirty seven patients were diagnosed with juvenile-onset psoriasis. There was no significant difference between the mean PASI score for adult versus juvenile onset psoriasis. Pustular psoriasis affected 15% of the patients including children and infants. Metabolic syndrome was absent in juvenile onset psoriatic patients and wasn't associated with a significantly higher PASI score in the adults affected. PASI score was significantly high in the HCV positive and the hypertensive patients.*

Conclusion: *Although the study sample is quite small to reach definite judgments on psoriasis in Egypt, yet we noticed that early onset psoriasis is quite a common and challenging disease. Metabolic syndrome is not common in the studied children with psoriasis. Pustular psoriasis is a common entity even in children and infants. HCV is associated with a severe disease and might be an inducing factor for psoriasis.*

Keywords: Adult-onset psoriasis, childhood-onset psoriasis, infantile-onset psoriasis, psoriasis in Egypt.

Introduction

Psoriasis is a common chronic, recurrent, immune-mediated disease of the skin and joints that has a negative impact on the quality of life [1]. Although psoriasis occurs worldwide, its prevalence varies considerably. A systematic review of the incidence and prevalence of psoriasis was done in 2013 and reported that in adults, the prevalence ranges from 0.91 to 8.5% and in children from 0 to 2.1% and is affected by the geographic location as its prevalence is found to increase with increasing the distance from the equator [2]. The prevalence of psoriasis is low in certain ethnic groups such as the Japanese, and may be absent in aboriginal Australians and Indians from South America [3,4].

Psoriasis has a strong genetic component, but environmental factors as infections play a role in the disease presentation [1]. Data on the clinical characteristics of psoriasis in Egypt are lacking, so this study aimed at addressing the disease and its clinical characterization in 100 Egyptian patients.

Materials and Methods

This cross-sectional study included 100 Egyptian psoriatic patients who were recruited consecutively from the Dermatology outpatient clinic at Ain-Shams University hospital after acceptance of the ethical committee for researches. The study was carried out in the period from January 2016 till July 2016. A detailed questionnaire was obtained after informed written consent. Data included were age, sex, family history, age of onset, precipitating factors, seasonal variation, and site of onset, associated diseases, joint affection and previous treatments received. A thorough clinical examination was done to detect the type of psoriasis, BSA, PASI score, nail and scalp affection. Blood pressure and waist circumference were measured. Some laboratory tests were done to detect associated diseases or co-morbidities.

These tests included CBC, ESR, fasting and 2 hours post prandial blood glucose, liver and renal function tests, lipid profile (Total Cholesterol, Triglycerides, HDL Cholesterol, LDL Cholesterol), hepatitis C virus (HCV) antibody and hepatitis B virus surface antigen. The diagnosis of metabolic syndrome was based on the presence of at least three out of the following five conditions:

abdominal obesity, elevated blood pressure, elevated fasting plasma glucose, high serum triglycerides and low high-density lipoprotein. The diagnosis of psoriasis was confirmed by a 5 mm punch skin biopsy stained with Haematoxylin and Eosin. The association between psoriasis and multiple variables, including family history, HCV co-infection, metabolic syndrome, pruritus, scalp affection, and nail affection was assessed.

Statistical Analysis

Data were coded and entered using the statistical package SPSS (Statistical Package for the Social Science; SPSS Inc., Chicago, IL, USA) version 17 for Microsoft Windows. Continuous variables were expressed as mean and standard deviation. Categorical variables were expressed as frequency and percent. Student's t test was used to assess the statistical significance of the difference between two study group means. ANOVA test was used to assess the statistical significance of the difference between more than two study group means. Chi square and Fisher's exact test were used to examine the relationship between categorical variables. P values <0.05 were considered as significant and <0.01 as highly significant

Results

Infantile-onset psoriasis was diagnosed in 10 patients (mean age: 1.02 ± 0.78; M: F 1.5:1), childhood-onset (2-18 years) in 27 (mean age: 11.1 ± 4, M: F 1.25:1) and adult-onset in the remaining 63 patients (mean age: 39.1 ± 14.5 years; M: F 2:1). The male patients were more than the females through all age groups though not statistically significant (Table 1).

Neither the age nor the sex had an influence on the severity of the disease as shown in Tables 2 and 3. Family history of psoriasis was positive in 13 patients with no significant difference among the different age groups (Table 1). Also, no significant difference was found between those with positive family history versus those with negative family history as regards the type of psoriasis, joint pain, pruritus, scalp or nail affection or PASI score (13.33 ± 9.95 and 13.37 ± 8.53 respectively, p value: 0.99) (Table 4).

		Onset						P	Sig
		Infantile onset		Childhood onset		Adulthood onset			
		N	%	N	%	N	%		
Sex	Female	4	40.00%	12	44.40%	21	33.30%	.593*	NS
	Male	6	60.00%	15	55.60%	42	66.70%		
HCV	Yes	0	0.00%	0	0.00%	7	11.10%	.257**	NS
	No	10	100.00%	27	100.00%	56	88.90%		
DM	Yes	0	0.00%	0	0.00%	6	9.50%	.014**	S
	No	10	100.00%	27	100.00%	57	90.50%		
HTN	Yes	0	0.00%	0	0.00%	12	19.00%	.130**	NS
	No	10	100.00%	27	100.00%	51	81.00%		
Family history	Yes	1	10.00%	7	25.90%	5	7.90%	.065**	NS
	No	9	90.00%	20	74.10%	58	92.10%		
Type of psoriasis	Vulgaris	9	90.00%	22	81.50%	48	76.20%	972**	NS
	Pustular	1	10.00%	4	14.80%	10	15.90%		
	Erythrodermic	0	0.00%	1	3.70%	5	7.90%		
Pruritis	Yes	2	20.00%	18	66.70%	45	71.40%	.006*	HS
	No	8	80.00%	9	33.30%	18	28.60%		
Scalp	Yes	8	80.00%	25	92.60%	43	68.30%	.044*	S
	No	2	20.00%	2	7.40%	20	31.70%		
Nails	Yes	2	20.00%	12	44.40%	32	50.80%	.189*	NS
	No	8	80.00%	15	55.60%	31	49.20%		
Joint disease	Yes	0	0.00%	5	18.50%	13	20.60%	.352**	NS
	No	10	100.00%	22	81.50%	50	79.40%		
Metabolic Syndrome	Yes	0	0.00%	0	0.00%	11	17.50%	035**	S
	No	10	100.00%	27	100.00%	52	82.50%		

Table 1: Comparison between infantile, childhood and adulthood cases as regards personal, medical, family history and clinical characteristics. *Chi-Square Tests **Fisher exact test.

	Onset						P	Sig
	Infantile onset		Childhood onset		Adulthood onset			
	Mean	±SD	Mean	±SD	Mean	±SD		
PASI score	10.01	6.3	13.1	10.1	8.36	1.12	.445	NS

Table 2: Comparison between infantile, childhood and adulthood cases as regards PASI score. *ANOVA.

Mean PASI Score				
	Males No (mean ± SD)	Females No (mean ± SD)	P value	Sig
Infantile onset	6 (10.6±7.3)	4 (11.4±4.7)	0.852	NS
Childhood onset	15 (16.1±12.2)	12 (9.9±7.6)	0.137	NS
Adult onset	42 (13.7±7.8)	21 (14.6±9.9)	0.69	NS

Table 3: Mean PASI score in the males and females of the different age groups.

		Family history				P	Sig
		Yes		No			
		N	%	N	%		
Sex	Female	5	38.5%	32	36.8%	1.00*	NS
	Male	8	61.5%	55	63.2%		
Type of psoriasis	Vulgaris	10	76.9%	69	79.3%	.867*	NS
	Pustular	2	15.4%	13	14.9%		
	Erythrodermic	1	7.7%	5	5.7%		
Joint disease	Yes	5	38.5%	13	14.9%	.055*	NS
	No	8	61.5%	74	85.1%		
Pruritis	Yes	7	53.8%	58	66.7%	.369*	NS
	No	6	46.2%	29	33.3%		
Scalp	Yes	10	76.9%	66	75.9%	1.00*	NS
	No	3	23.1%	21	24.1%		
Nails	Yes	6	46.2%	40	46.0%	.990**	NS
	No	7	53.8%	47	54.0%		

Table 4: Comparison between cases with and without family history. * Fisher exact test, **chi square test.

Plaque psoriasis was the commonest type as it was diagnosed in 79% of our patients. Pustular psoriasis was diagnosed in 15 patients including infants while erythrodermic was the least (6%) and was mainly in adults with only one childhood case. Twenty eight percent of the patients reported exacerbations in winter in comparison to 7% having their exacerbations in summer. Infection provoked the disease in 11% and stress played a role in 16%. Five patients (5%) had severe disease exacerbations after drug intake, one patient had severe relapse of her pustular psoriasis after azithromycin intake for upper respiratory tract infection, 3 others after penicillin and one male patient after sildenafil intake for erectile dysfunction.

One female had the onset of her pustular psoriasis during pregnancy. Forty five patients couldn't relate the onset of the disease to any factor. Pruritus was present in 65 patients, 45 of the patients were with adult onset psoriasis. Although this parameter was difficult to assess in those with infantile or childhood onset psoriasis, yet about 18 of those with childhood onset and 2 with infantile onset had pruritus (Table 1).

Elbows and/or knees were the initial site of onset of psoriasis in 23%, upper and/or lower limbs other than elbows and knees in 18%, trunk in 18%, scalp in 17%, palms and/or soles in 8%, flexural in 6%, diaper area in 4%, dorsum of hand and feet in 3%, face in 1%, nails in 1% and at trauma sites in 1%. The percentage of scalp affection among the hundred patients was 76% with significantly higher prevalence in juvenile onset compared to adult onset psoriasis and that of nail affection was 46% with no significant difference among the different age groups (Table 1). Nail pitting was the form of affection in juvenile-onset psoriasis with more severe affection in adults (subungual hyperkeratosis, onycholysis).

Joint pain was positive by history and examination in 18% of the patients, 13 adults and 5 children with no statistical significance between them. Adults had a more peripheral and a more disabling affection than children as three of those with adult onset psoriasis were on wheelchairs with evident arthritis of their knee and ankle joints, they were all males. The remaining ten had affection of the small joints of their hands with equal sex distribution. The 5 children had arthralgia of big joints, but this was not confirmed by imaging studies.

Hepatitis B virus was absent in all patients, but HCV antibody was positive in 7 patients, all adults, who had a significantly more severe disease with the mean PASI: 20.17±7.42 compared to a mean PASI of 12.77±8.56 (p value= 0.030) in the HCV free counterparts. All HCV positive patients had psoriasis vulgaris except one who had erythrodermic psoriasis. There was no significant difference between those with HCV versus those who were virus free as regards the other variables (Table 5).

		HCV				P*	Sig
		Yes		No			
		N	%	N	%		
Sex	Female	2	28.6%	35	37.6%	1.00	NS
	Male	5	71.4%	58	62.4%		
Family history	Yes	0	.0%	13	14.0%	.590	NS
	No	7	100.0%	80	86.0%		
Type of psoriasis	Vulgaris	6	85.7%	73	78.5%	.284	NS
	Pustular	0	.0%	15	16.1%		
	Erythrodermic	1	14.3%	5	5.4%		
Joint disease	Yes	1	14.3%	17	18.3%	1.000	NS
	No	6	85.7%	76	81.7%		
Pruritis	Yes	6	85.7%	59	63.4%	.416	NS
	No	1	14.3%	34	36.6%		
Scalp	Yes	6	85.7%	70	75.3%	1.000	NS
	No	1	14.3%	23	24.7%		

Nails	Yes	3	42.9%	43	46.2%	1.000	NS
	No	4	57.1%	50	53.8%		
Metabolic Syndrome	Yes	2	28.6%	9	9.7%	.170	NS
	No	5	71.4%	84	90.3%		

Table 5: Comparison between HCV positive and negative patients. *Fisher exact.

Metabolic syndrome was diagnosed in 11 patients, all with adult-onset psoriasis and the number of the females affected was significantly higher than the males (8 and 3 respectively, p value: 0.017). No significant difference was found between those with metabolic syndrome versus those without it as regards the other variables (Table 6). Although PASI score was higher in those with metabolic syndrome compared to those without it, yet the difference was not statistically significant (15.9 ± 12.6 versus 13.07 ± 8.1 respectively, p value: 0.528).

In the present study, patients who had hypertension (HTN) had a significantly higher PASI score than the normotensive ones (18.13 ± 9.9 and 12.6 ± 8.29 respectively, p value 0.04), but the other variables weren't affected by hypertension (Table 7).

		Metabolic Syndrome				P*	Sig
		Yes		No			
		N	%	N	%		
Sex	Female	8	72.7%	29	32.6%	.017*	S
	Male	3	27.3%	60	67.4%		
Family history	Yes	1	9.1%	12	13.5%	1.0*	NS
	No	10	90.9%	77	86.5%		
Type of psoriasis	Vulgaris	9	81.8%	70	78.7%	1.0*	NS
	Pustular	2	18.2%	13	14.6%		
	Erythrodermic	0	.0%	6	6.7%		
Joint disease	Yes	2	18.2%	16	18.0%	1.0*	NS
	No	9	81.8%	73	82.0%		
Pruritis	Yes	6	54.5%	59	66.3%	.509*	NS
	No	5	45.5%	30	33.7%		
Scalp	Yes	6	54.5%	70	78.7%	.127*	NS
	No	5	45.5%	19	21.3%		
Nails	Yes	1	9.1%	45	50.6%	.009**	NS
	No	10	90.9%	44	49.4%		

Table 6: Comparison between cases with and without Metabolic Syndrome. * Fisher exact test, **chi square test.

		Hypertension				P*	Sig
		Yes		No			
		N	%	N	%		
Sex	Female	6	50.0%	31	35.2%	.352*	NS
	Male	6	50.0%	57	64.8%		
Family history	Yes	1	8.3%	12	13.6%	1.00*	NS
	No	11	91.7%	76	86.4%		
Type of psoriasis	Vulgaris	11	91.7%	68	77.3%	.323*	NS
	Pustular	0	.0%	15	17.0%		
	Erythrodermic	1	8.3%	5	5.7%		
Joint disease	Yes	3	25.0%	15	17.0%	.448*	NS
	No	9	75.0%	73	83.0%		
Pruritis	Yes	9	75.0%	56	63.6%	.533*	NS
	No	3	25.0%	32	36.4%		
Scalp	Yes	7	58.3%	69	78.4%	.153*	NS
	No	5	41.7%	19	21.6%		
Nails	Yes	6	50.0%	40	45.5%	.767**	NS
	No	6	50.0%	48	54.5%		
Metabolic Syndrome	Yes	6	50.0%	5	5.7%	.0001*	HS
	No	6	50.0%	83	94.3%		

Table 7: Comparison between hypertensive and non-hypertensive patients. * Fisher exact test, **chi square test.

As for the treatment received by the patients at Ain-Shams University Hospitals, it included the classic treatment of psoriasis (emollients, phototherapy, methotrexate, cyclosporine, acitretin) as indicated for each case. Biological treatments aren't covered by the insurance. The details of the treatments and the response to those treatments are out of the scope of this study.

Discussion

The pre-existing data on the epidemiology of psoriasis in Egypt are indeed scarce. Abdel-Hafez and his colleagues reported a prevalence rate of 0.19 % in their survey on 8008 rural inhabitants of all ages and both sexes from a representative of three villages of Assiut Governorate, Upper Egypt [5]. Nearly similar observations were reported earlier in 1992 in rural El-Tall ElKabir, Egypt (0.1%) [6].

This study, as well as other studies, found no gender predilection for psoriasis [2,7]. Previous studies have linked psoriasis and metabolic syndrome together based on overlapping inflammatory pathways and genetic predisposition [8,9]. The increased prevalence of metabolic syndrome among patients with psoriasis has been documented in multiple countries including Italy, Israel, India, Japan, China, Tunisia, and the United States [9-16]. As mentioned in the study done by Parisi and his colleagues [2]. Furthermore, the association of psoriasis with metabolic syndrome was reported to occur early in the course of the disease as psoriasis is associated with obesity and elevated lipids even in childhood [18,19]. However, in our study only 11 patients out of the hundred had the metabolic syndrome and all were adults. This is a very important finding that needs a larger number of patients to confirm because it opposes previous studies.

Psoriasis and hypertension seem to be linked together. This was previously reported in a study done in the UK in 2015 and was confirmed in this study [20]. Taglione and his colleagues do not support the hypothesis that HCV infection may play a role in the pathogenesis of psoriasis while Imafuku and Nakayama suggest

that in hepatitis C patients, elevated tumor necrosis factor-α causes progression of the hepatic disease and might possibly induce psoriasis in patients with a certain predisposition [21,22]. In the current study, HCV was positive in 7 patients (7%); similar to the study by Imafuku and Nakayama, and those patients had a more severe disease as shown by PASI score [22]. The onset of the virus preceded that of psoriasis, so this might point to the possibility of HCV infection as an inducing factor for psoriasis. It is of note that pustular psoriasis did not proceed HCV in any of the patients, a finding that needs further investigations.

Generalized pustular psoriasis is known to be a rare form of psoriasis and is even more uncommon in children [23]. Setta-Kaffetzi and his colleagues reported that children aged 6 weeks to 10 years can be affected, though rarely [24]. On the contrary, generalized pustular psoriasis constituted 15% of the studied cases, 5 of which were children and one of the latter had the history of disease onset at the age of one year with severe resistant and recurrent disease.

Patients with early onset (type I psoriasis), tend to have more relatives affected and more severe disease than patients who have a later onset of the disease (type II psoriasis), however in our study both the family history and the severity of the disease were not specifically higher in juvenile onset psoriasis, but a larger number of patients is required to judge correctly [25]. In our study, about half of the patients had nail involvement affecting all age groups and this was previously proved by other studies [26,27].

The presence of asymptomatic joint involvement is recognized in patients with psoriasis and needs specific imaging techniques [28]. In our study, we depended on history and clinical findings only which limits our judgement on this item.

Conclusion

Inspite of the small number of patients included in this work, yet this preliminary study highlights some important points about the clinical features of psoriasis in Egypt. There is no sex influence on the severity of psoriasis. Generalized pustular psoriasis is not a rare entity in Egypt, moreover it is not uncommon in Egyptian children. HCV is associated with a higher PASI score and it might also be a triggering factor for psoriasis, however further studies on a large number of HCV positive patients are needed to confirm this postulation. Metabolic syndrome is not common in Egyptian psoriatic children and is not associated with a more severe disease. Larger sample-based studies are recommended to be able to understand the clinical characteristics of psoriasis in Egypt and whether there are ethnic variations or not.

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