

Dermoscopic Evaluation of Long-Term Topical therapies with steroid, narrow band UVB and PUVA in Chronic Psoriasis

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Abstract

Background: Psoriasis is a chronic and recurrent skin disease, which has a rather multifactorial immunopathogenic mechanisms consisting of red, scaly plaques occurring most commonly on the elbows, knees, scalp, and lower back, but any skin surface can be involved. Approximately 125 million people worldwide have psoriasis. Patients with psoriasis experience substantial morbidity and increased rates of inflammatory arthritis, cardiometabolic diseases, and mental health disorders. Dermoscopy is widespread method for diagnosis of psoriasis **Aim:** To study and provide information about epidemiology of psoriasis in Egypt and estimate its prevalence on the basis of age, sex, course and duration. **Methods:** Ninety patients with psoriasis (90) divided into 3 groups and studied as regard their demographic criteria. The incidence and prevalence of psoriasis in Egypt was summarized. **Results:** The current work showed that a total of 90 target lesions from 90 patients (38.9% females and 61.1% males; average age [\pm SD] 40.52 ± 9.9 years; average lesion duration 3.62 (weeks) were included in the study. The duration of disease was significantly lower in the third group than that in first and second groups ($P=0.001$). In first group 56.7% were males and 43.3% were females. Most of them had gradual course of disease. The mean age was 40.2 ± 10.7 and the mean duration of disease was 3.9 ± 1.3 . As regard second group 66.7% were males and 33.3% were females. Most of them had gradual course of disease. Their mean age was 40.7 ± 10.5 and mean duration of disease was 4 ± 1.02 . Regarding third group 60% of patients were males and 40% females. Most of them had gradual course of disease. Their mean age was 40.7 ± 8.7 and mean duration of disease was 3 ± 0.78 .

Keywords: Psoriasis Area Severity Index; local psoriasis severity index.

1. Introduction

Psoriasis is a lifelong immune-mediated inflammatory skin disease with multiple phenotypically distinct subtypes e.g., plaque, flexural, guttate, pustular or erythrodermic. It is associated with morbidities such as psoriatic arthropathy, psychological, cardiovascular, and hepatic diseases [1].

Psoriasis is assessed by the extent of skin involvement (body surface area (BSA) and the severity of erythema, induration, and scaling. In secondary care, validated scores such as Psoriasis Area Severity Index (PASI). Another scale exists which is the local psoriasis severity index (LPSI), which is the sum of severity of erythema, scaling/desquamation, and induration/infiltration on a 5-point scale [0 to 4], with a total score ranging from 0 to 12 [1]

Psoriasis can occur at any age, although most patients present with the condition before 35 years old. Studies that report information on the incidence of psoriasis are limited. Additionally, several studies have reported on the prevalence of psoriasis. Earlier study specific estimates of the prevalence of psoriasis in adults range between 0.27% (95% confidence interval 0.17 to 0.36) and 11.4%, with age, sex, geography, ethnicity, genetic and environmental factors contributing to the variation in the prevalence of the disease. Higher prevalence rates have been reported at higher latitudes and in white people compared with other ethnic groups [2].

Psoriasis is estimated to affect about 2–4% of the population in western countries. Important factors in the variation of the prevalence of psoriasis include age, gender, geography, and ethnicity, probably due to genetic and environmental factors. Higher prevalence rates have been reported at higher latitudes, and in

Caucasians compared with other ethnic groups. In addition, the wide variation in prevalence estimates may be influenced by aspects of psoriasis such as its remitting-relapsing course, diversity of clinical presentations, and variation in severity [3].

The prevalence of psoriasis is relatively high in the general population. Risk factors, which have been documented in epidemiological studies include smoking, alcohol consumption, diet, infection, drugs, and stressful life events. Psoriasis affects the quality of life to substantial degree. epidemiology can offer a major contribution to understand psoriasis [4].

The prevalence of psoriasis varies in different areas of the world; however, higher rates are reported in developed countries accounting for 4.6% of the population [5]. As a general observation, the prevalence of psoriasis is also higher among populations that live further away from the equator. The severity of psoriasis symptoms can vary significantly between different patients; Mild psoriasis is defined as affecting less than 3% of the body surface. Moderate psoriasis is defined as affecting between than 3-10% of the body surface. Comparatively, severe psoriasis is defined as affecting more than 10% of the body surface. The palm of the hand, for example, is approximately 1% of the total body surface area [6].

Not only can psoriasis be highly variable in morphology, distribution, and severity but also there is a considerable difference in the incidence of disease because of environmental, genetic, and geographic factors. Various national and international patient registries have been established for proper documentation and follow-up of psoriasis patients [7].

the aim of the study was to perform a systematic review and meta-analysis examining the incidence and prevalence of the disease in Egypt.

2. Patients and methods

This is a study conducted in Dermatology & Venereology Department, Faculty of Medicine, Benha University. Participants were collected from outpatient clinic of the department in Benha University Hospitals. An approval for the work from Ethics Committee in Faculty of Medicine, Benha University was obtained.

Patients of both sexes within the age group (15-45 years old) suffering from moderate-to-sever psoriasis vulgaris (PASI >10). An informed written consent was explained to then signed by each participant.

Diagnosis of psoriasis patients: The clinical diagnosis was done for each patient [8] and the severity of psoriasis for each patient was evaluated using psoriasis area severity index (PASI) score [9].

Exclusion criteria:

- Patients with severely impaired hepatic function.
- Patients with severely impaired renal function.
- Immunosuppression.
- Pregnant and lactating females.
- Abnormal UVA sensitivity.
- Intake of photosensitizing drugs.
- Oral antipsoriatic therapy within the last 4 weeks.
- Topical antipsoriatic therapy within the last 2 weeks.

All patients were subjected to the followings:

- Complete history taking.
- Complete general examination and local clinical examination.
- Detailed dermatological examination including type and sites of psoriasis and scoring of psoriasis by PASI score.

- Patients were scheduled to start treatment according to clinical condition and PASI score.

Statistical analysis

All data were collected, tabulated and statistically analyzed using SPSS 22.0 for windows (SPSS Inc., Chicago, IL, USA) & MedCalc 13 for windows (MedCalc Software bvba, Ostend, Belgium). Data were tested for normal distribution using the Shapiro Walk test. The collected data were summarized in terms of mean \pm Standard Deviation (SD) and range (minimum - maximum) for quantitative data and frequency and percentage for qualitative data. Comparisons between the different study groups were carried out using the Chi-square test (χ^2) and the Fisher Exact Test (FET) to compare proportions as appropriate, the independent t-test (t) was used to detect difference between parametric quantitative data. Paired sample t test (for parametric) or Wilcoxon signed rank sum test (for non-parametric) was used to assess changes in parameters over 2 occasions. One Way Analysis of Variance (ANOVA) (F) test was used to detect difference between parametric quantitative data, significant ANOVA was followed by post hoc multiple comparisons using Bonferroni test to detect the significant pairs. Statistical significance was accepted at P value <0.05.

3. Results

Patients with psoriasis (number 90) of both sexes within the age group (≥ 15 years old), patients were equally divided into three groups and studied as regard their demographic criteria. The incidence and prevalence of psoriasis in Egypt was summarized.

Base line characteristics in table 1,

Table (1) Base line characteristics of the studied group.

Variable	(n = 90)	
	No.	%
Age	Mean \pmSD (range)	
	40.52 \pm 9.9 (25 – 59)	
Sex	Female	35 38.9
	Male	55 61.1
Onset	Gradual	78 86.7
	Acute	12 13.3
Duration (years)	Mean \pmSD (range)	
	3.62 \pm 1.14 (2 – 5)	
LPSI score before treatment	Mean \pmSD (range)	
	7.1 \pm 1.53 (4 – 10)	

It was shown that a total of 90 target lesions from 90 patients (38.9%) females and (61.1%) males; average age [\pm SD] 40.52 \pm 9.9 years; average lesion duration 3.62 (weeks) were included in the study. Mean LPSI before treatment was 7.1 \pm 1.53 (Table 1).

Table (2) Comparison between the studied groups as regard demographic criteria.

Variable		PUVA Group (n=30)		NB-UVB Group (n=30)		Steroid Group (n=30)		Test	P value
		No.	%	No.	%	No.	%		
Age	Mean \pm SD (range)	40.2 \pm 10.7 (27 – 59)		40.7 \pm 10.5 (25 – 56)		40.7 \pm 8.7 (26 – 57)		F= 0.03	0.9
Sex	Female	13	43.3	10	33.3	12	40	$\chi^2=0.65$	0.8
	Male	17	56.7	20	66.7	18	60		
Onset	Gradual	26	86.7	25	83.3	27	90	$\chi^2=0.57$	0.9
	Acute	4	13.3	5	16.7	3	10		
Duration (years)	Mean \pm SD (range)	3.9 \pm 1.3 [†] (2 – 5)		4 \pm 1.02 [†] (2 – 5)		3 \pm 0.78*# (2 – 4)		F = 7.89	0.001 (HS)
LPSI score before treatment	Mean \pm SD (range)	7.16 \pm 1.48 (5 – 10)		7.2 \pm 1.49 (4 – 9)		6.83 \pm 1.64 (4 – 10)		F = 0.52	0.6

Table (2) shows that in first Group, 56.7% (17/30) of patients were males. Most of them had gradual course of disease 86.7%. Their mean age was 40.2 \pm 10.7 and the mean duration of disease was 3.9 \pm 1.3. As regard second Group, it included 30 patients, 66.7% of them were males and 33.3% were females. Most of them had gradual course of the diseases (83.3%). Their mean age was 40.7 \pm 10.5 and mean duration of disease was 4 \pm 1.02. Regarding third group, 60% of patients were males. Most of them (90%) had gradual onset of disease. Their mean age was 40.7 \pm 8.7 and mean duration of disease was 3 \pm 0.78. The duration of disease was significantly lower in the steroid group than that in NB-UVB and PUVA groups ($P=0.001$).

4. Discussion

Psoriasis is a lifelong immune-mediated inflammatory skin disease with multiple phenotypically distinct subtypes. Psoriasis is assessed by the extent of skin involvement (body surface area (BSA)) and the severity of erythema, induration, and scaling. In secondary care, validated scores such as Psoriasis Area Severity Index (PASI) and Physician Global Assessment Scale are routinely used along with patient reported outcome measures such as Dermatology Life Quality Index (DLQI). Another scale exists which is the local psoriasis severity index (LPSI), which is the sum of severity of erythema, scaling/ desquamation, and induration/infiltration on a 5-point scale [0 to 4], with a total score ranging from 0 to 12 [1].

By dermoscopy, the diagnosis of psoriasis was confirmed by the presence of regularly distributed dotted vessels and the white scales characteristic of psoriasis. When examining patient with thick scales, fluid interface was used for better vasculature visualization [8].

Therapeutic options for psoriasis include topical therapy, phototherapy, or systemic treatment [2]. Second-line therapy includes phototherapy (narrowband ultraviolet B radiation (NB-UVB -UVB) and psoralen with ultraviolet A radiation (PUVA)) and conventional systemic agents (methotrexate, ciclosporin and acitretin) [10].

Therefore, the aim of this study was to study and provide information about epidemiology of psoriasis in Egypt and estimate its prevalence on the basis of age, sex, course and duration.

In our study the mean participants age was (40.52 \pm 9.9 years).

Studies reporting age-specific prevalence of psoriasis showed an increasing trend with age until around 60 or 70 years of age, after which it decreases [11].

Studies reporting on the age-specific incidence of psoriasis consistently showed a dual peak for psoriasis onset, with evidence suggesting that the two peaks for age at onset occurs slightly earlier in women than in men. Previous incidence data discovered a bimodal age form in psoriasis onset, with the first peak of psoriasis incidence about 30-39 years of age while the second peak about 60-69 years of age [12].

Results from Iskandar et al. systematic review are consistent with what is already known that females tend to have a higher incidence in early-onset psoriasis and the peak of psoriasis occurs in their late teens and early twenties. The corresponding peak of early-onset psoriasis in men appeared later in their thirties [13].

However, this difference is not observed in late onset psoriasis in which the pattern of incidence by age did not appear to differ between males and females [14-18].

In this study, (61.1%) of patients were males, while only (38.9%) were females.

There was no agreement on differences in psoriasis incidence and prevalence between genders. However, the absolute magnitude of the difference between genders observed in most of the studies was small, with some studies reporting no difference between the genders whilst others reported an increased incidence and/or prevalence in one gender compared to the other. However, a male preponderance has been reported in the vast majority of the studies [19-26].

The reason for this is unclear.[27] However, societal taboo (for females), racial differences [28], and difference in self-directed health behaviors (e.g. exercise, smoking, diet, or alcohol intake) are some of the reasons that have been hazarded to cause the variance in the incidence and prevalence of psoriasis detected between genders. Nevertheless, it is important to note that the absolute extent of the difference between genders detected in most of the studies was small, and its clinical implications are therefore questionable.

In the current study, the onset of disease was gradual in (86.7%) of cases and acute only in (13.3%) of them. Similar to El-Komy et al. [29]. study, in which the disease onset was gradual in 85.0 % of cases and sudden in only 15 % of them.

In our study, the average lesion duration was 3.62 (weeks). In contrast to El-Komy et al. [29]. study, who found that the mean disease duration was 106.6 ± 60.0 months

Our study results have revealed that the mean LPSI before treatment was (7.1 ± 1.53) .

Similarly, in Lesiak et al. [30] study it was (5.25 ± 1.82) , Errichetti et al. [31] found that the mean LPSI at the baseline visit was (7.0 ± 1.2) .

5. Conclusions

From our study, we can conclude that the mean age of psoriasis is around forty years old, males are affected more than females, and the majority of cases had gradual disease onset.

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