



Prevalence of Psoriasis Vulgaris and Its Associated Risk Factors in Pakistan

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Aim: To find out the prevalence of psoriasis vulgaris and its associated risk factors.

Study Design: Descriptive cross-sectional.

Place and Duration of Study: Study was conducted at Rawalpindi Leprosy Hospital during January 2019 to December 2019.

Methodology: The diagnosed cases of Psoriasis Vulgaris (PsV) were included in the study. All the patients were investigated on the basis of an in depth Performa. The Performa include all the relevant clinical and family history of the patient along with the personal details. Data was analyzed by using Statistical Package for the Social Sciences (SPSS) version 20. All the numerical variables were presented as mean with standard deviation while categorical data as frequency and percentages. The association of risk factors with the Psoriasis was calculated by using the Chi-square test. p-value less than 0.05 was considered as significant.

Results: Mean age with standard deviation of patients was 34.7 ± 14 . Most of the diagnosed patients were male and below 40 years of age, only 4.2% cases were having positive family history of Psoriasis and found significant correlation. The frequency of onset of symptoms in adolescent was more as compared to childhood i.e. 95.3% and 4.7% respectively. Majority of psoriasis cases (65.3%) were from non-smoker group and having strong association with smoking. The frequency of arthritis among psoriasis patients was 23.7% and majority of the patients, who developed arthritis were those having age <40 year and were suffering from psoriasis since 5-10 years.

Conclusion: Current study concluded that Psoriasis vulgaris is having higher prevalence rate among male and below 40 years of age group. The results also suggested a strong association of severity of psoriasis with certain risk factors including family history, age of onset of symptoms, smoking and arthritis.

Keywords: Psoriasis vulgaris; smoking; arthritis.

1. INTRODUCTION

Psoriasis (PsV) is one of the most severe chronic skin diseases. It is characteristically lifelong disorder. There is no medication for the disease, but its symptoms can be minimized by different treatments [1]. It has five main types, which are inverse, guttate, plaque, erythrodermic and pustular. Out of these types, the most prevalent is plaque psoriasis, in which white and red shades of scaly lesions produce on epidermal layer. These lesions are produced by epidermal maturation and hyper proliferation [2, 3].

The global incidence of psoriasis is approximately 2%, but is more in developing countries, i.e. about 4.6%. Approximately two thirds of people are having milder form of psoriasis, with less than 3% of the cutaneous surface of the body is affected, but in severe form, there is wide involvement of skin [4]. Psoriasis affects men and women equally. Although it may begin at any age but two peaks in age groups are noted, one between age 20 and 30 years and another peak between ages 50 and 60 years [5]. That is why on the basis of age of onset, Psoriasis can be categorized in two types, one in patients with early-onset or Type I psoriasis (before the age of 40) and other is with late-onset or Type II psoriasis that occur after the age of 40 years [6].

Psoriasis is considered as a complex disease in which the interface between genetic and environmental risk factors are thought to play a main role. Focusing specifically environmental factors, these include infections mainly pharyngitis, smoking, trauma, stressful events and smoking [7, 8]. The most well-known comorbidity in psoriasis patients is arthritis (PsA), with incidence of 10–30% [9, 10]. So the aim of

current study is to find out the prevalence of psoriasis vulgaris and its associated risk factors.

2. METHODOLOGY

A descriptive cross-sectional study was conducted at Rawalpindi Leprosy Hospital during January 2019 to December 2019. Sample size was calculated by using OpenEpi calculator and was 190. The diagnosed cases of Psoriasis Vulgaris (PsV) were included in the study while those patients who were having any other associated disease were excluded to avoid bias in identifying the associated risk factors. All the patients were investigated on the basis of an in depth Performa. The Performa include all the relevant clinical and family history of the patient along with the personal details.

Data was analyzed by using Statistical Package for the Social Sciences (SPSS) version 20. All the numerical variables were presented as mean with standard deviation while categorical data as frequency and percentages. The association of risk factors with the Psoriasis was calculated by using the Chi-square test. p-value less than 0.05 was considered as significant.

3. RESULTS

Mean age with standard deviation of patients was 34.7 ± 14 . Maximum age noted was 89 years while minimum age was 4 years among cases. Regarding age of onset, patients were categorized as early-onset if they were first detected before the age of 40 year and late onset if they were diagnosed after 40 years. About 63.9% were above 40 years and 27.3% were below 40 years of age as presented in Fig. 1. Current results also found that most of the diagnosed patients were male and below 40 years of age.

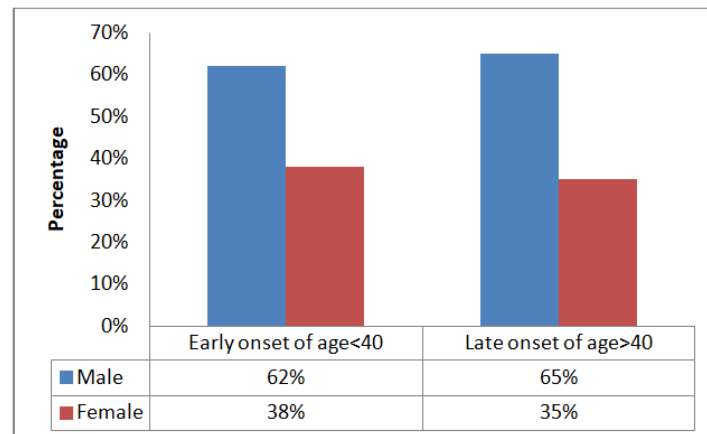


Fig. 1. Frequency distribution of age of onset and gender affected

Looking over the demographic variables, only 4.2% cases were having positive family history of Psoriasis and found significant correlation. The frequency of onset of symptoms in adolescent was more as compared to childhood i.e. 95.3% and 4.7% respectively. The cases were distributed into two groups i.e. smoker and non-smoker and results reported that majority of psoriasis cases (65.3%) were from non-smoker group. There were 66 out of 190 (34.7%) psoriasis patients who were smokers and about 50 (76%) of them had psoriatic plaques all over their body. The results suggested a strong association of smoking with severity of psoriasis. In current study the frequency of arthritis among psoriasis patients was 23.7% and majority of the patients, who developed arthritis were those having age <40 year and were suffering from psoriasis since 5-10 years. The demographic variables and their correlation with psoriasis is presented in Table 1.

On the basis of Body surface area affected among studied cases, mostly cases were those in which disease was diagnosed since 4-5 years and having severe form of psoriasis, as their whole body was affected (Fig. 2).

4. DISCUSSION

Psoriasis inclines to a chronic disease but, its course is changeable. There is mark variation in rigorousness over time, and remissions at some period are seen in 40% of cases [11]. Although it is not a life threatening disease but is related with morbidity. It ranges from mild form, having small hidden lesions that do not affect quality of life, to severe wide-spread skin lesions that leads to poor quality of life [12, 13].

Psoriasis lesion formed as outcome of hyper proliferative skin with impulsive keratinocyte maturation and partial cornification with nuclei preservation within the stratum corneum cells. Thus mitotic speed of the basal keratinocytes is increased resulting in thickening of the epidermis. The redness of the abrasions is due tortuous capillaries. There is also immune cells including dendritic cells and CD4+ chambers, which penetrate within the superior papillary dermis, and neutrophils and CD8+ Th cells inside the integument [14, 15]. There are several forms of psoriasis, the most common is Psoriasis Vulgaris (PsV), affecting almost 85 to 90% of all patients affected with psoriasis.

Clinically, it represents as elevated, well demarcated, erythematous inscriptions with supporter silvery scale. The skin areas most affected are the elbows, knees, sacral region and scalp. Other sites that could be affected are hands, feet, nails and the intertriginous areas (groins, axilla, umbilicus, retro-auricular folds [16]. The plaques are characterized by an oozing, red inflammation without scaling. A Swedish study reported that the ano-genital area was affected in 24 % of psoriasis patients [17]. Current study found that in majority of cases whole body was affected while very few of them reported with scalp involvement.

There are multiple risk factors, widely classified as genetic and environmental factors. Specifically focussing the environmental factors, include family history, history of smoking, infections mainly pharyngitis, trauma and any stressful event [18]. The role of smoking as a risk factor for psoriasis is well documented in literature. The role of smoking in the

Table 1. Characteristics of study participants and their association with Psoriasis

| Variables | Frequency | % | p-value |
|-----------------------------|-----------|-------|---------|
| Family History of psoriasis | | | |
| Yes | 8 | 4.2% | 0.03 |
| No | 182 | 95.8% | |
| Onset of Symptoms | | | |
| Adolescent | 181 | 95.3% | 0.831 |
| Childhood | 9 | 4.7% | |
| History of smoking | | | |
| Yes | 66 | 34.7% | 0.025 |
| No | 124 | 65.3% | |
| Arthritis | | | |
| Yes | 45 | 23.7% | 0.008 |
| No | 145 | 76.3% | |

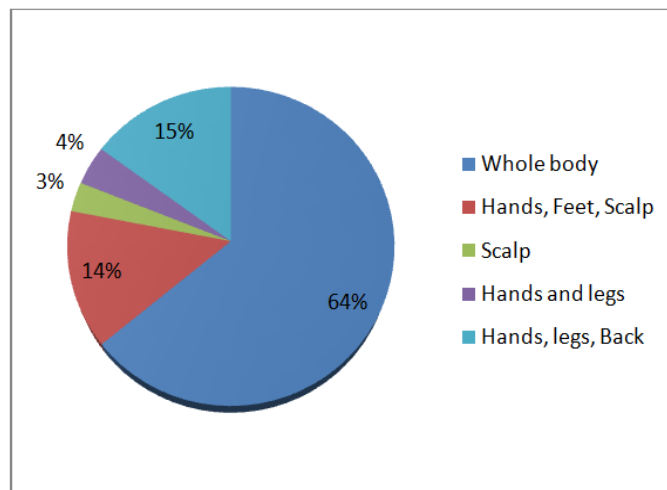


Fig. 2. Frequency distribution of body surface area affected

pathogenesis of psoriasis was given by the Nurses' Health Study II that reported, for the first time, a strong correlation between smoking and incidence of psoriasis in a large population-based prospective cohort study [19]. In their study, the risk of psoriasis was 1.8 for active smokers and 1.4 for passive smokers. Current results are in accordance with results reported in previous studies, that smoker are at high risk for developing disease [20]. Stressful life events are also thought to have an effect on course of psoriasis. In a case-control study, psoriasis subjects were more likely to involve a stressful event that preceded the onset and the exacerbation of the disease as compared to patients having other skin diseases [21].

The most well-known comorbidity in psoriasis patients is arthritis (PsA), with incidence of 10–30% [22]. It is considered by the progress of pain and joints tenderness next to ligaments and tendons [23]. PsA is equally common among

both genders and the onset of the disease is usually occurs between 30 to 55 years of age [24]. Current study found most of the patients who developed arthritis, were those having age <40 year and were suffering from psoriasis since 5-10 years so higher prevalence of arthritis among patients with severe form of the disease.

5. CONCLUSION

Current study concluded that Psoriasis vulgaris is having higher prevalence rate among male and below 40 years of age group. The results also suggested a strong association of severity of psoriasis with certain risk factors including family history, age of onset of symptoms, smoking and arthritis.

CONSENT

Written informed consent was taken from the patients.

ETHICAL APPROVAL

Study got approval from the Ethics committee of PMAS–Arid Agriculture University Rawalpindi with a reference Number: ABPA00129.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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