## ORIGINAL ARTICLE

# Epidemiology of Psoriasis in Malaysia: A Hospital Based Study

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**ABSTRACT**

**Background: Psoriasis is a complex chronic inflammatory skin disease with a worldwide distribution.**

**Objective: To determine the prevalence of psoriasis according to age, gender and ethnicity among outpatients attending the dermatology clinic in Hospital Tengku Ampuan Rahimah, Klang Malaysia.**

**Study population: All outpatients attending the specialist clinic of the dermatology department in Hospital Tengku Ampuan Rahimah, Klang, Malaysia from January 2003 to December 2005.**

**Methods: This is a retrospective descriptive study of all outpatients who attended the specialist clinic from January 2003 to December 2005 and diagnosed for psoriasis. The study population consisted of patients of all ages, both gender and different ethnic groups (Malay, Chinese, Indians and foreign workers) living in the Klang Valley and the surrounding areas.**

**Results: A total of 5607 patients were examined during a period of three years and 9.5% were found to be suffering with psoriasis. It was more common in males (11.6%) than in females (7.2%). Patients within the 40-60 year age group had the highest (17.2%) rate and were lower in the younger age group including those aged over 60 years (8.1%). With regards to ethnicity, it was more common in Indians followed by Malays, Chinese and migrant foreign workers respectively. The study indicates that psoriasis is common in Malaysia and its distribution varies with age, ethnicity and gender.**

**KEY WORDS:**
*epidemiology of psoriasis, gender, age, ethnicity*

## INTRODUCTION

Psoriasis is a common chronic recurring non contagious inflammatory skin disorder characterized by raised thickened patches of red skin. The cause of the disease remains unknown. It is a genetic skin disorder probably initiated by hyperactivity of the triggered state of the local cutaneous innate immunity as exemplified by abundant TNF-alpha activity due to overreaction or reduced stimulus threshold in response to an as yet unknown trigger[1]. It is not a life threatening disease but psoriasis lesions can cause pain, itching, bleeding and in some even arthritis. In many cases, patient with psoriasis are unable to carry out their daily activities. They suffer from emotional perception, sexual relationship and career choices.

Prevalence of psoriasis varies from country to country and by ethnic groups. The reason for the geographic variation in prevalence is unknown. Low prevalence rates have been reported among Japanese, Eskimos, Australian aborigines, West Africans and South American Indians[2-7]. Caucasians are more frequently affected than other ethnic groups[2]. Both genetic and environmental factors are suggested. It is estimated that the prevalence of psoriasis ranges from 0.5% to 4.6% worldwide[2-7]. The prevalence in Europe is cited between 1% and 2% of the population[3] whereas in USA it is estimated to be 0.6 to 4.8% and there are no reliable data to support the common assumption that psoriasis is less common in blacks[4]. Gerfand *et al*[5] in their study reported a prevalence of 2.5% in Caucasians and 1.3% in African American patients indicating that although psoriasis is less common it is not rare in blacks. In Australia a prevalence of 1.2% and 2.3% has been reported[6,7]. As for Malaysia there are no population based studies but Adam[8] reported an incidence of 4% in 1980 among patients attending a dermatology clinic in Kuala Lumpur, Malaysia. Siow *et al* reported an incidence of 2.15% among 181 patients attending a dermatology clinic in Seremban, Malaysia[9]. This study was conducted as there is not much information available with regards to the prevalence of psoriasis especially the cases reported in hospitals in developing countries in relation to ethnicity, age groups and gender.

## MATERIALS AND METHODS

This is a retrospective study of psoriasis among outpatients attending the dermatology clinic in Hospital Tengku Ampuan Rahimah, Klang, Malaysia from January 2003 to December 2005. Medical records of all patients who attended the dermatology outpatient clinic during the said period were first identified manually. All patients referred for specialist care for their dermatological problems were tagged. Diagnosis for psoriasis was confirmed after thorough history from patient was taken followed by physical examination and laboratory investigation. In case of males, face, chest and back were examined whereas in the female only the face and neck were examined. Other

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sites like buttocks, thighs, arms and stomach were examined when the patient indicated the sites that were involved. Clinical manifestations included skin with red or dull red color with thin, thick or mixture of thin and thick scales. Distribution of the condition in different parts of the body was noted including the presence of nail disease and presence of Koebner phenomenon. A total of 5607 patients were examined for dermatological problems during the three years. The patients consisted of 2613 (46.5%) males and 2994 (53.5%) females. The study population consisted of 2729 (48.4%) Malays, 1975 (35.2%) Indians, 737 (13.1%) Chinese and 175 (3.2%) foreign workers from Bangladesh, Indonesia, Thailand, India, Nepal and Myanmar. The study variables were age, gender and ethnic groups.

## RESULTS

During the period January 2003 to December 2005 a total of 5607 patients were treated for dermatological conditions at the outpatient clinic of whom, 9.5% were confirmed to be suffering from psoriasis. In the younger age group (0-9 years) the differences in the prevalence rate between the genders were almost similar. Among the 0-9 year age group, 3.9% of the males and 3.3% of females were affected as shown in Table I. With increase in age, the number of cases of psoriasis increased particularly among males than females in all age groups. Most of the cases were reported in the 40-60 year age group that accounted for 17.2% of the positive cases followed by the 21-39 (10.8%) year age group and those above 60 years (8.2%).

**Table I: Distribution of psoriasis cases according to age and gender among outpatients attending dermatological Clinic in Hospital Tengku Ampuan Rahimah Klang, Selangor, Malaysia**

| Age groups | Male | | Female | | Total | |
|---|---|---|---|---|---|---|
| | No. Pos | (%) | No. Pos | (%) | No.Pos | (%) |
| 0 - 9 | 16/413 | 3.9 | 16/491 | 3.3 | 32/ 90 | 3.5 |
| 10 - 20 | 38/622 | 6.1 | 39/628 | 6.2 | 77/1250 | 6.2 |
| 21 - 39 | 90/700 | 12.9 | 89/878 | 9.2 | 161/ 1578 | 10.8 |
| 40 - 60 | 123/540 | 22.8 | 73/657 | 11.1 | 296/1197 | 17.2 |
| >60 | 39/338 | 11.5 | 164/340 | 4.7 | 55/ 678 | 8.1 |
| Total | 316/2613 | 11.6 | 215/2994 | 7.2 | 531/ 5607 | 9.5 |

**Table II: Distribution of psoriasis according to ethnic groups among outpatients attending Hospital Tengku Rahimah, Klang, Selangor, Malaysia**

| Ethnicity | No. exam | No. Pos (%) |
|---|---|---|
| Malay | 2720 | 233 (8.6) |
| Chinese | 737 | 44 (6.0) |
| Indian | 1975 | 255 (12.9) |
| Others | 175 | 9 (5.1) |
| Total | 5607 | 541 (9.6) |

There are definite differences in the prevalence rate of psoriasis among the various ethnic groups living in Malaysia. The rates were higher among Indians (12.9%) followed by Malays (8.6%), Chinese (6.0%) and foreign workers (5.1%) respectively as shown in Table II.

The most common sites affected are the arms (53%) followed by legs (44%) and more or less evenly distributed among other limbs such as the trunk (15.9%), genital region (12.4%), scalp (11.8%), eyebrows (6.8%) and face (2.4%) as shown in Table III.

**Table III: Area of body commonly affected with psoriasis**

| Affected area | No. affected | (%) affected |
|---|---|---|
| Arms | 287 | (53.0%) |
| Legs | 238 | (44.0%) |
| Trunk | 86 | (15.9%) |
| Genital region | 67 | (12.4%) |
| Scalp | 64 | (11.8%) |
| Hands | 39 | (7.2%) |
| Eyebrows | 37 | (6.8%) |
| Soles | 26 | (4.8%) |
| Face | 13 | (2.4%) |

## DISCUSSIONS

In this study psoriasis was found to be more common in males 11.6% (316/2613) than females 7.2% (215/2994). Adam[8] reported there was more than twice the number of males (145/203) than females (58/203) affected. This is in contrast to other studies[10,11] which state that the prevalence of psoriasis is the same in both men and women irrespective of socioeconomic status. In this study we noted, a steady increase in the number of cases of psoriasis among the males compared to females with increase in age. Males were also found to have an earlier onset of psoriasis than females. This is in contrast to other studies where females were reported to have an earlier onset and higher prevalence than their male counterparts[12,13].

Data from literature indicates that the average age of patients with psoriasis varied from 10-30 years but the disease can start at any age including infancy[14,15]. Farber and Nall[12] found that the average age of onset of psoriasis was 27.8 years in 35% of patients. Onset occurred before 20 years of age and 10% occurred before 10 years of age. Neimann *et al*[16] in their study postulate that psoriasis has a bimodal peak of activity. They state that the bimodal distribution in psoriasis incidence represents two clinical presentation of psoriasis, so called Type 1 and Type 11. Type I is said to occur before the age of 40 and accounts for 75% of all cases and results in more severe form whereas Type 11 occurs in patients after 40 years of age. Our study did not show any indication of bimodal prevalence in the distribution of psoriasis among the different age groups. There was only one peak in the 40-60 year age group. Other studies[13,14] have also demonstrated decreasing prevalence of psoriasis in the older age groups especially those above the ages of 70 years[13,16, and 17].

A study conducted among the South American Indians concluded that not a single case of psoriasis was reported among the study population[18] indicating either genetics or environment play a role in the incidence. Psoriasis is said to be less common among Asian countries with a prevalence of 0.4% in China, 0.3% in Japan and 0.8% in India[18]. The frequency in Africans, Afro Americans and Asians is 0.4% to 0.7%[19] respectively showing a significant inter-racial geographical variation in the distribution of thedisease. A

study conducted in Singapore estimated that 40,000 people have psoriasis and 10% of them have inflammation of joints known as psoriatic arthritis[20]. As this is a retrospective study, information regarding arthritis among our patients was not recorded. This is one of the limitations of this study. Another limitation of this study is that being a hospital based study the outpatients belonging to different ethnic groups do not reflect the actual distribution of the ethnic groups living in the Klang Valley. The Indians seen at the clinic account for 35.2% of the outpatient whereas in actual reality they account for 7% of the population; the Malays account for 48.4% of the outpatients. However if we compare the number of cases within each ethnic groups, we find that of the 1975 Indians examined 12.9% (255/1975) were positive for psoriasis; 8.6% (233/2720) Malays, 6.0% (44/737) Chinese and 5.1% (9/175) foreign workers from Bangladesh, Indonesia, India, Thailand, Myanmar and Nepal. The differences in the prevalence rate probably depend on the genetic make up of the ethnic groups. Adam[8] in his study suggested that the higher incidence among Indians may be due to the close genetic relationship that exists between Caucasians and Indians than it does between the former and the Mongoloids and Polynesians. The incidence of psoriasis among the foreign workers was lower than the Malaysians. The differences may be, because all foreign workers who come into this country are thoroughly checked for their medical conditions before they are permitted to work and they belong to the younger age group (20-35 years).

Of the parts of the body that were examined the extensor surface of the limb especially elbows, knees, shins, scalp, lower back, buttocks are mainly affected but it can also involve other parts of the body. Adam[8] in his study stated that the scalp and lower limbs were commonly affected and less on hands and feet. In this study the arms and legs were more commonly affected than other regions. One of the limitations of this study is that we were unable to examine the private parts of all patients, some objected due to modesty.

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