

The Epidemiology of Psoriasis in a Dermatology Clinic in a General Hospital in Port-of-Spain, Trinidad and Tobago, West Indies

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ABSTRACT

Psoriasis is a chronic skin disorder which is believed to affect 2% of the world's population. This retrospective study analyzed the frequency of occurrence of psoriasis in the population of a dermatology clinic in a general hospital in the capital city of Trinidad and Tobago. Psoriasis was found to be more common in males and the peak presentation was between 50–59 years. Psoriasis was more common in persons of East Indian descent compared to those of African origin.

Epidemiología de la Psoriasis en una Clínica Dermatológica en un Hospital General en Puerto España, Trinidad y Tobago, West Indies

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RESUMEN

La psoriasis es un trastorno crónico de la piel que afecta – según se cree – al 2% de la población mundial. Este estudio retrospectivo analizó la frecuencia con que la psoriasis se presentó en la población de una clínica dermatológica en un hospital general en la capital general de Trinidad y Tobago. Se halló que la psoriasis era más frecuente en los varones, y que el pico de su presentación se produce entre los 50 y 59 años. La psoriasis fue más común entre las personas de ascendencia indoriental, en comparación con aquellas de origen africano.

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INTRODUCTION

Psoriasis is a chronic inflammatory disorder which is believed to affect 2% of the world's population (1). It is reported to occur with similar frequency in both sexes and is more common in temperate than tropical climates (2).

Psoriasis is reported to be associated with HLA antigens B13, B17 and B37 all of which are linked to Cw6, as well as HLADR7. Gene linkages have been found related to chromosomes 6p, 17q, 4q, 1q, 3q, 19p and 1p (1). It is reasonable to assume from the results of studies elsewhere (3, 4) that the risk of developing psoriasis in the Caribbean population, as in others, is also influenced by their presence or absence.

The population of the Caribbean islands reflects the plantation economy that existed during the last few centuries and consists of a majority of persons of African origin, descendants of slaves (5), but there is an admixture of Amer-

indians, Europeans, East Indians, Chinese and others. The slaves who came to the Caribbean and North America were mainly from West Africa but psoriasis is uncommon in West African countries such as Nigeria – 0.8% (6) and Ghana – 0.4% (7) and low incidences of 0.7% (8) and 1.4% (9) were reported among blacks in the United States of America (USA). This is in contrast to the frequencies of 3.15% reported from Kenya (4) and 2.25% from Ethiopia in eastern Africa (10). One researcher (11) has implicated a high intake of linoleic acid present in maize as the cause of the low occurrence of psoriasis in Africans. He proposed that linoleic acid increases production of prostaglandin E2 and this results in suppression of cytokine synthesis. Others argue that omega-3 fatty acids are more likely to be responsible for the low occurrence (12). The medical literature contains many reports of incidence and prevalence rates for countries in Africa and Asia, however, there is a dearth of literature from the English-speaking Caribbean about the occurrence of psoriasis.

This study is a retrospective survey of the patients seen in a general hospital dermatology clinic during a five-year period and presents findings relating to trends in frequency of

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occurrence of psoriasis with respect to age, gender and ethnic origin.

SUBJECTS AND METHODS

The study was approved by the Ethics Committee of the Port-of-Spain General Hospital. Data were collected from the case admission register of the dermatology clinic of the Port-of-Spain General Hospital, a referral centre in the capital city of Trinidad and Tobago. Information is usually transcribed by hand into the register from the patient's record by a clerk at the end of each clinic.

This study examined data on age, gender, ethnic group and clinical diagnosis of new patients. Data were analyzed using Epi Info version 6.04b software, utilizing codes designed for this study, frequencies and chi-squared tests.

RESULTS

There were 7400 new cases recorded in the new case register during the five-year period from January 1, 1998 to December 31, 2002. Of these, 4506 (61%) were female and 2894 (39%) were male resulting in a female: male ratio of 1.5:1. The number of cases presenting annually is shown in Table 1.

Table 1: Frequency of psoriasis by year

Year	Number of cases overall	Number of cases of psoriasis	Percentage
1998	1555	71	4.5
1999	1538	88	5.7
2000	1264	75	5.9
2001	1552	69	4.4
2002	1491	76	5.1
Total	7400	379	5.1

Three hundred and seventy-nine cases (5.1% of the total cases) of psoriasis were diagnosed. There were 183 females (48%) and 196 males (52%). When compared with the new case population as a whole (Table 2), the proportion of

Table 2: Frequency of psoriasis by gender

Gender	Number of cases of psoriasis (%)	Number of cases overall (%)	Percentage with psoriasis
Female	183 (48)	4506 (61)	4.1
Male	196 (52)	2894 (39)	6.8
Total	379 (100)	7400 (100)	5.1

$p < 0.005$, chi-square = 26.3

males with psoriasis was significantly greater than females ($p < 0.005$).

The mean age at presentation for females was 44 years (Standard Deviation – SD = 21) and that for males was 43 years (SD = 18.6). The majority of cases (77%) presented between 20–69 years with a peak between 50–59 years (Figure).

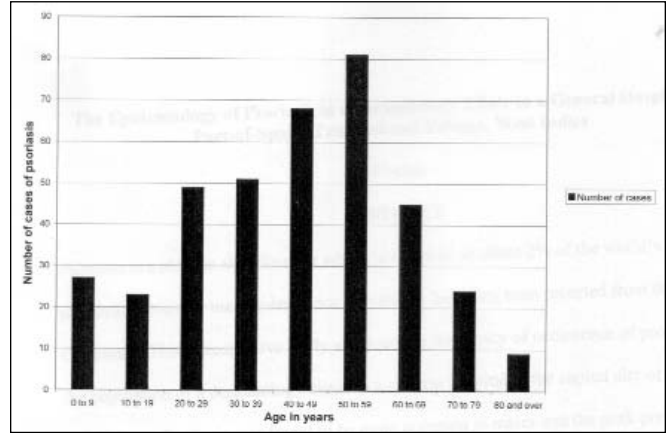


Figure: Frequency of presentation of psoriasis by age group.

The number of persons of African descent was more than double that of persons of East Indian descent among the new cases (3538 cases vs 1654 cases). Among the cases of psoriasis, there were 190 persons of East Indian descent and 146 persons of African descent, representing 50.1% and 38.5% cases of psoriasis respectively. Four per cent of the cases were of mixed race, while Chinese or Caucasian comprised 0.3% each. The ethnic group had not been recorded for 6.9%. This is demonstrated in Table 3. Psoriasis was sig-

Table 3: Frequency of psoriasis by ethnic group

Ethnic group	Number of cases overall (%)	Number of cases of psoriasis (%)
African	3538 (47.8)	146 (38.5)
East Indian	1654 (22.4)	190 (50.1)
Mixed	524 (7.1)	15 (4.0)
Chinese	11 (0.1)	1 (0.3)
Caucasian	8 (0.1)	1 (0.3)
Other	0 (0)	0 (0)
Unknown	1698 (22.5)	26 (6.9)
Total	7400 (100)	379 (100.1)

Percentages do not tally due to rounding
 $p = 0.03$, chi-square = 4.52

nificantly more common in persons of East Indian descent than Africans ($p = 0.03$, chi-square = 4.52).

The proportion of clinic patients overall of African descent presenting with psoriasis was 4.1% (146/3538); this was significantly lower than that in patients of East Indian descent (190/1654 = 11.5%) ($p < 0.005$, chi-square = 101.95).

DISCUSSION

This survey was conducted at the Port-of-Spain General Hospital which is a referral centre and a teaching hospital for the University of the West Indies, and is situated in the capital city, Port-of-Spain. This probably created some selection bias and, as such, the cases observed in this clinic may not be representative of the population as a whole. The majority of patients come from North Trinidad where the ethnic distribution may be different from other parts of the country. Interpretation of the ethnic origin of patients in this study may also have been subject to bias, since what was documented may have been the admitting clerk's impression, rather than response data obtained from the patient.

As a referral centre, the hospital clinic receives not only cases for diagnosis, but also persons whom general practitioners may find difficult to manage and those who cannot afford to seek care in the private sector.

Psoriasis was diagnosed in 5.1% of new cases presenting during the five-year period from 1998 to 2002. Quamina (13) reported a frequency of psoriasis of 4% in a study which covered the period 1969–1973 during dermatology practice at Port-of-Spain General Hospital as well as another general hospital in south Trinidad. He also reported a frequency of 6% in a subsequent publication (14). These figures differ significantly from those of La Grenade and Alabi (15) who saw 2.3% of new cases presenting with psoriasis at a clinic at the University Hospital of the West Indies in Kingston, Jamaica, and Dunwell and Rose (16) who reported a frequency of 0.94% from a private practice in Jamaica. Despite the location of Trinidad and Jamaica in the Caribbean albeit separated by just over 1100 miles, psoriasis appears to be much more common in Trinidad and approaches the frequency of psoriasis reported from temperate countries such as the United Kingdom, where it was diagnosed in 6.2% of new patients (7). The frequency was more than the 1.5 to 3% reported in Western Europe and Scandinavia (2). In a review of psoriasis in the tropics, Farber and Nall (3) concluded that psoriasis occurred more frequently in temperate than tropical countries. However, this study does not support this finding.

Psoriasis is reported to affect both sexes equally (2), however, in this study population, a significantly greater proportion of males was diagnosed compared to females, although the female to male ratio for the clinic was 1.5:1. One possible explanation is that psoriasis often has a major impact on quality of life (17, 18) especially when it is severe, and this may drive male patients to seek help more often than they would for other conditions perceived as less troublesome.

The peak age of presentation was observed in the 50–59-year age group and there was no peak in childhood as reported by others (2).

Psoriasis occurred more frequently in patients of East Indian descent than those of African descent in this survey and this was statistically significant. Quamina (13) reported

that the frequency was similar in both racial groups (East Indians – 44%, Africans – 38%) however, his study provided no statistics regarding the racial distribution in the clinics where he practised. The frequency of psoriasis in Trinidadians of African descent (4.1%) was higher than the figures reported from clinics in West Africa (6, 7) and the USA (8, 9) but closer to those reported from east Africa (4, 10).

Psoriasis was diagnosed in 4.8% of new black adult patients presenting in a clinic in South London (19). These were black patients of “African, Afro-Caribbean and mixed race”. This level was close to the 4.1% frequency seen in new patients of African descent in this study. These results are not surprising, since many people from the Caribbean, including Trinidadians, migrated to the United Kingdom in the 1950s.

Some studies quote prevalence rates rather than incidence and this makes comparison of the occurrence of psoriasis difficult. The frequency of psoriasis in Indian patients ranged from 0.5% to 3% (3) and this was considerably less than that observed in our patients of East Indian descent (11.5%). An overall prevalence of about 0.3% has been reported in Mongoloid races (20).

Trinidad is the larger of two islands in the Republic of Trinidad and Tobago where, according to the last published census (21), African and East Indians are represented almost equally within the population. Persons of mixed race form 20.5% of the population and the remainder is constituted of Caucasians, Chinese, Syrians, Lebanese and others. Despite the apparent division into ethnic groups, there is very likely to be a considerable genetic admixture related to the history of the islands. The Caribbean islands are close geographically, but their histories of colonization and occupation differ and so does the constitution of their populations. Trinidad, whose original people were Amerindians, was colonized by Spanish, French and British and became home to African slaves, Indian and Chinese indentured labourers, as well as Portuguese and other Europeans, Syrians and Lebanese (22). Jamaica, by contrast to Trinidad, has a majority of 95% of African descent, nearly 2% East Indian and close to 1% Chinese (23). This may explain the low incidence of psoriasis in dermatology clinics in Jamaica. No ethnicity data were presented for the Jamaican studies (15, 16).

Psoriasis is a complex, multifactorial disorder. Many studies support the genetic basis and the immunology of the disorder is no doubt influenced by the genetic factors. The role of environmental factors has not been ruled out. The frequency of psoriasis in the Trinidadian population must be influenced by some or all of these factors as well.

This study analyzed the epidemiology of psoriasis in a limited clinic setting with a small population, however, larger population-based studies are needed to determine the true incidence and/or prevalence of psoriasis in Trinidad and other Caribbean islands.

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