

Epidemiological pattern of psoriasis, vitiligo and atopic dermatitis in India: Hospital-based point prevalence

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ABSTRACT

Background: The knowledge of the prevalence of common dermatoses will be useful for optimum use of valuable resources of the country. **Aim:** The aim of the study is to determine the pattern and prevalence of psoriasis, vitiligo and atopic dermatitis (AD) in India. **Materials and Methods:** This was a hospital-based study conducted on a single day in one medical college each in four zones of India. **Results:** The point prevalence of dermatological cases was 9.25%. The point prevalence of psoriasis, vitiligo and AD were 8%, 9.98% and 6.75% respectively. Chronic plaque type psoriasis was the most common (50%) clinical pattern. The most common site of involvement of psoriasis was the palms. Stable type of vitiligo was common which accounted for 65.21%. Lower lip was involved in 75% of mucosal vitiligo. Lower limbs were the most common site of onset of vitiligo. AD was most prevalent in the first decade (40.7%). Personal history of atopy was present in (59.5%) patients. Dry skin was present in 92.5% of patients. **Conclusions:** Our data correlates with previous hospital-based prevalence studies of psoriasis, vitiligo and AD.

Key words: Atopic dermatitis, psoriasis, vitiligo

INTRODUCTION

The exact prevalence of psoriasis, vitiligo and atopic dermatitis (AD) in India is not known and we rely on Western data. The information on prevalence would be useful for planning strategies to manage these diseases. This point prevalence study was undertaken to determine the epidemiological pattern of psoriasis, vitiligo and AD in India. To conduct a proper epidemiological study a huge amount of money and trained manpower is needed to carryout door-to-door survey. Even door-to-door survey can have limitations since all the occupants may not be available and information regarding the occupants may not be revealed. In the light of above situation this hospital-based study was conducted.

MATERIALS AND METHODS

The study was conducted in four zones of India namely North, South, East and West. An invitation letter to join the study was sent to all

the medical colleges in India having a dermatology postgraduate programme through post and email. Thirty eight medical colleges accepted our invitation to participate in the study. One college from each zone that had volunteered for the study was randomized by lots. A common proforma was sent to the selected medical colleges, one in each zone.

Each center was provided with the protocol and proforma to record the data. The study was conducted on 20 November 2012. At the end of the day, the details regarding dermatology outpatients and also the total number patients attending hospital was collected simultaneously.

The data regarding the patients with psoriasis, vitiligo and AD was collected as per the proforma. The data obtained was analyzed to determine the point prevalence of the three diseases.

RESULTS

Medical college selected by random method from each zones were AIIMS, Delhi (North zone), VSS

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There were 4785 cases registered in the outpatient departments of the four hospitals on 20 November 2012 and 443 cases were registered for dermatology consultation. Point prevalence of dermatological cases in the four centers was 9.25%. The point prevalence of psoriasis, vitiligo and AD among dermatology diseases were 8.002%, 9.98% and 6.75% respectively [Table 1].

Among the psoriasis patients, the ratio of male to female was 1.1:1. Highest prevalence was noted in the age group of 21-30 and 41-50 years, comprising 25% each [Table 2]. Chronic plaque psoriasis was the most common (50%) clinical pattern. The most common sites of involvement in descending order of frequency were the palms and soles (33%) and scalp (20.8%). Nearly 4.1% presented with erythroderma. 12.5% had family history of psoriasis.

The male to female ratio among vitiligo patients was 1:1.8. Highest point prevalence of vitiligo was found among 11-20 years of age group, comprising 26.08%. Indian Academy of Dermatology, Venereology and Leprosy task force on vitiligo has defined stability of vitiligo as a patient reporting no new lesions, no progression of existing lesions and absence of Koebner's phenomenon during the preceding one year.

In our study, 65.21% had stable type of vitiligo and 34.78% had unstable type. Vitiligo vulgaris was the most common form of the disease in 56.52% patients. Focal, acrofacial and segmental types accounted for 15.1%, 19.56% and 8.6% respectively. Lower lip involvement was present in 75% of patients and

both lips were involved in 41%. Genital involvement was present in 25%. The site of onset was the lower limb (43.47%), upper limb (15.21%), face (15.21%) abdomen (13.04%), back (4.34%), chest (2.17%) and breast (2.17%). Positive family history was found in 17.39% patients of vitiligo, among them the first-degree relatives (parent/brother/sister/son/daughter) accounted for 50% and second-degree relatives (grandparent/maternal and/or paternal uncle or aunt) accounted for the remaining 50%.

The diagnosis of AD was confirmed by Hanifin and Rajka's criteria. The male to female ratio in AD was 1:1.25. AD was most prevalent in the first decade (40.7%). Personal history of atopy was present in (59.5%) patients, who mostly had allergic rhinitis followed by conjunctivitis and bronchial asthma. Family history was present in 37.03% of patients of which 60% were of the first generation and 30% of the second generation. Itching was the main complaint recorded in 96.2%. Dry skin was present in 92.5% of patients. Flexural involvement was present in 48.14%.

DISCUSSION

Psoriasis is a common disorder in which environmental factors contribute to the development of sharply demarcated erythematous scaly plaques in genetically predisposed individuals. From the available studies, the prevalence of psoriasis in India ranges from 0.44 to 2.8%.^[1] The point prevalence in our study was 8%. All four zones had equal prevalence. The variations that other studies have reported may be due to small sample size. The high prevalence rates in our study may be due to the study being conducted during winter. We report a male predominance of psoriasis, similar to other reports. Chronic plaque type psoriasis was the most common type of psoriasis in our study. Bedi^[2] reported a positive family history of psoriasis in 14% of their patients which is similar to our study 12.5%.

Vitiligo is a commonly acquired, idiopathic, heritable depigmentary disorder of the skin and/or mucous membranes. The point prevalence of vitiligo was 9.982% in our study compared to that by Handa and Kaur, where the relative prevalence varied between 0.46 and 8.8%.^[3] Most of the studies reveal a female preponderance of vitiligo.^[4] The cause of female preponderance is probably because of greater cosmetic awareness and the impact of the disease on their social life.^[3] The male to female ratio in our study was 1:1.8. Koranne *et al.* stated that in India, family history ranged from 6.25% to 18%, which is similar to our reported figures. Younger people were more frequently affected and had active vitiligo compared to older people. Early onset and family history suggests a genetic factor. In our study, generalized vitiligo (56.52%) was the most common type followed by acrofacial and other types. Koranne *et al.*^[5] and Sarin *et al.*^[6] also reported generalized vitiligo to be more common in their studies. Lower limbs were the most

Table 1: Point prevalence and sex ratio of psoriasis, vitiligo and atopic dermatitis

Diseases	Point prevalence %	Male:Female ratio
Psoriasis	8	1.1:1
Vitiligo	9.98	1:1.8
Atopic dermatitis	6.75	1:1.25

Table 2: Age distribution among psoriasis and vitiligo patients

Age group	Psoriasis %	Vitiligo %
0-10	-	6.5
11-20	12.5	26.08
21-30	25	21.7
31-40	20.8	21.7
41-50	25	15.2
51-60	16.6	6.5
>60	-	2.175

common site of onset in 43.47% of patients in this study irrespective of the clinical type of vitiligo, similar to studies by to Shajil *et al.*^[7] Behl and Bhatia,^[8] Dutta and Mandal^[9] and Lerner.^[10] This could be because of larger body surface area of lower limbs compared to upper limbs.

AD is a chronic relapsing eczematous skin disease characterized by pruritus and inflammation and accompanied by cutaneous physiological dysfunction, with a majority of the patients having a personal or family history of “atopic diathesis.”

The prevalence of atopic eczema in 56 countries had been found to vary between 3 and 20.5%.^[11] In our study the point prevalence of AD was 6.75%.

In contrast to children in north India, only 0.01% (3 out of 2100) children in a south Indian study had AD.^[12] Even in our study, the prevalence in south India was only 2.8%. This relative lower prevalence has been attributed to different dietary habits and climate.^[12] The flexural involvement in our study was found in 48.14% of atopic patients, similar to another study.^[13] In our study, dry skin was found in 92.5% of AD at the time of presentation. The changed lipid content and increased epidermal water loss causes dry skin.^[14] Personal and family history of atopy was observed in 59.25% and 37.03% respectively. In another study, the personal and family history of atopy was observed in 54% and 65%, respectively.^[15] Family history has varied in many studies ranging from 36% to 42%. Itching was present in 96.2% of patients at the time of presentation. Itching in AD is caused by central and peripheral neural sensitization, impaired barrier function, itch scratch cycle and various mediators including serine proteases, interleukin 31 and nerve growth factor.^[16]

The point prevalence of psoriasis, vitiligo and AD were 8%, 9.98% and 6.75% respectively. Our data correlates with previous hospital-based prevalence studies of psoriasis, vitiligo and AD. The limitation of our study is that it is not the exact prevalence in the community since it was a hospital-based study. Hence more detailed community based epidemiological

studies need to be done to know more about the disease course and clinical patterns that vary in different individuals.

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