

## Original Research Article

# Seasons and pediatric dermatoses: a cross-sectional observational study in an urban skin hospital

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## ABSTRACT

**Background:** It is a well-known that climatic conditions and seasonal variation have a direct effect on skin and the prevalence of certain skin diseases change directly with changing seasons. The presence of certain skin diseases in children reflect the status of health, hygiene and personal cleanliness of the society. The aim of the study was to know the prevalence of various skin conditions in different seasons.

**Methods:** All fresh cases of children under 12 years of age attending the skin OPD were recorded and were divided based on the three seasons i.e.; summer winter and rainy. The results were statistically evaluated.

**Results:** The top six conditions of our study were impetigo, miliaria, pityriasis alba, scabies, xerosis and papular urticaria. Impetigo and miliaria were more common during summer season, xerosis during winter season and scabies during rainy season.

**Conclusions:** Different climatic conditions have varied effect on the skin and may lead to various dermatoses. To effectively correlate between seasons and skin conditions more such extensive studies on different population and ethnic groups have to be conducted.

**Keywords:** Seasons, Seasonal variation, Pediatric dermatoses

## INTRODUCTION

The evaluation of skin disorders is an important component of primary health care practice for all including infants and children.<sup>1</sup> Infancy (birth to 1 year) and childhood (1-11 years) is a critical period where congenital and acquired dermatological disorders can have an impact on the child's self-esteem, relationships with caregivers and peers, and performance in school.<sup>2</sup> The prevalence of certain skin diseases in children can reflect status of health, hygiene and personal cleanliness of a community.<sup>1</sup> It's a well-known fact that type and amount of disease in any community are affected directly or indirectly by climate. Various climatic factors that may determine the incidence of skin diseases are cold, heat, light, sunshine and

humidity.<sup>3</sup> The aim of the study was to assess and evaluate the importance of seasonal variation in various skin disorders affecting the under 12 population.

## METHODS

In a period of one year, we examined 1388 fresh cases of children attending our skin outpatient's department. We divided the cases based on three seasons i.e.; summer (March to June); rainy season (July to October) and winter season (November to February). For each case a detailed proforma was filled which included name of the patient, age, sex, detail history with cutaneous and systemic examination. Relevant investigations were carried out wherever necessary. The findings were recorded and

statistical evaluation was done. Children under 12 years attending the OPD with primary skin conditions were included, follow up cases, children above 12 years of age and patients with secondary skin conditions were excluded from the study.

## RESULTS

The total number of patients in our study were 1388. Total male patients were 761 and female patients were 627. Two hundred patients were less than 1 year, 342 patients belonged to the age group of 1 to 3 years, 239 patients in between 3 to 5 years and 607 patients were above 5 years (Table 1).

**Table 1: Dermographic profile of the patients.**

Age (years)	Sex		Total
	Male	Female	
<b>Less than 1 year</b>	115	85	200
<b>1-3</b>	175	167	342
<b>3-5</b>	137	102	239
<b>Above 5 years</b>	334	273	607
<b>Total</b>	761	627	1388

Majority of the patients (49.92%) belonged to infection and infestation group followed by eczematous conditions 18.65%. Among the infective and infestation dermatoses scabies was the most common condition constituting 20.82 % of the cases followed by bacterial infections 16.79%. Viral infections constituted 8.21% and fungal infections were 4.11%. Pityriasis alba was the most common condition 32.82% among the eczematous conditions followed by xerosis 23.89%, polymorphic light eruption (PMLE) 10.81% atopic dermatitis 10.42%, seborrheic dermatitis 6.95%, diaper dermatitis 5.02%, pompholyx 4.63%, contact dermatitis 4.25%, infective eczema 0.77% and nummular eczema 0.39%. Miscellaneous cases accounted to 31.41% which included acute urticaria, alopecia areata, lichen planus, phrynoderma etc. Top 6 conditions of our study were scabies (Figure 1), insect bite reaction (IBR) (Figure 2), impetigo (Figure 3), pityriasis alba (Figure 4), xerosis (Figure 5) and miliaria (Figure 6).



**Figure 1: Scabies.**



**Figure 2: Insect bite reaction.**



**Figure 3: Impetigo.**



**Figure 4: Pityriasis alba.**



**Figure 5: Xerosis.**



**Figure 6: Miliaria.**

Scabies (26.45%) and IBR (15.37%) and pityriasis alba (6.45%) were more common in rainy season, impetigo (16.42%) and miliaria (6.61%) during summer season and xerosis (12.74%) during winter season. Table 2 shows the comparative prevalence of these diseases during summer winter and rainy season.

On statistical analysis, scabies was more prevalent during rainy season ( $p < 0.0001$ ,  $\chi^2 = 20.58$ ). Impetigo and miliaria were more prevalent during summer season ( $p < 0.0001$  and  $\chi^2 = 13.37$ ), ( $p < 0.0001$  and  $\chi^2 = 22.5$ ) respectively.

Xerosis was more prevalent during winter season ( $p < 0.0001$  and  $\chi^2 = 65.07$ ).

**Table 2: Seasonal variation in top 6 conditions.**

Name of the diseases	Summer	Percentage of cases (%)	Rainy	Percentage of cases (%)	Winter	Percentage of cases (%)	Total	Percentage of cases (%)
<b>Scabies</b>	67	14.29	160	26.45	62	19.75	289	20.82
<b>IBR</b>	74	15.78	93	15.37	33	10.51	200	14.41
<b>Impetigo</b>	77	16.42	67	11.07	22	7.01	166	11.96
<b>P. alba</b>	26	5.54	39	6.45	20	6.37	85	6.12
<b>Xerosis</b>	10	2.13	12	1.98	40	12.74	62	4.47
<b>Miliaria</b>	31	6.61	13	2.15	3	0.96	47	3.39

## DISCUSSION

The pattern of skin disease is a consequence of poverty, malnutrition, overcrowding, poor hygiene, illiteracy and social backwardness in many parts of India.<sup>1</sup> Infections and infestations like pyoderma, parasitic infestations and viral infections have been classified as preventable diseases and the incidence can be reduced by improving the socioeconomic status of the community. In a similar study conducted by Balai et al the most common skin disorder was infections followed by eczematous conditions (40.60% and 34.86%) which is similar to our study (49.92% and 18.65%).<sup>1</sup>

Figuroa et al conducted a study among school children in rural Ethiopia where infestations were the most common condition 75% followed by bacterial infections 32.1% which is similar to the results in our study where infestations were 41% and bacterial infections constituted 33.62%.<sup>4</sup>

In a similar study by Banerjee et al, the prevalence of eczematous dermatoses was 22.98% and seborrheic dermatitis was the most common condition and in our study 18.65% of patients had eczematous dermatoses but pityriasis alba was the commonest condition accounting to 32.82%.

The top six conditions in our study were miliaria, impetigo, scabies, papular urticaria, xerosis and pityriasis alba and in

the top six conditions in their study were impetigo, miliaria, scabies, furunculosis, seborrheic dermatitis and papular urticaria.<sup>5</sup>

In our study impetigo and miliaria were more prevalent during the summer season this could be due to high temperature and humidity which increases the proliferation of bacteria in cases of pyogenic infections and also causes obstruction of sweat glands leading to increase incidence of miliaria.<sup>5,6</sup> Xerosis was more common during winter season as the skin is exposed to external insults like low temperature and low humidity.<sup>7</sup> The prevalence of scabies in rainy season was statistically significant in our study but in similar studies no such correlation was found.

In our study we did not find any statistically significant correlation between presence of IBR and pityriasis alba during rainy season.

Different seasons and climatic conditions may determine the incidence of certain skin conditions based on the different levels of exposure of skin, in our study we tried to study the relationship between various climatic factors and their effect on skin in the pediatric age population.

## CONCLUSION

Our study points out the probability of a relation between the seasons and occurrence of various dermatoses. To

effectively correlate between seasons and skin conditions more such extensive studies on different populations and ethnic groups have to be conducted. Understanding this relation better will improve the care and outcome of such dermatoses.

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