

## Spectrum of Pediatric Dermatoses and Seasonal Variation

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### ABSTRACT

**Objective:** To determine the pattern of skin disorders seen among children attending a Medical College Hospital.

**Study Design:** A descriptive Study.

**Place and Duration of Study:** The study was conducted at Dermatology Dept. Pakistan Railway Hospital from Dec 2011 to July 2012.

**Materials and Methods:** All children 13 years and below attending the Dermatology OPD with skin diseases were included between the period of December 2011 to July 2012. A detailed history was taken; thorough clinical examination was done and was supported by investigations wherever necessary. The diseases were tabulated based on the various groups and results were analysed.

**Results:** A total of 2357 cases (boys 1037; girls 1320) with different dermatoses were included in the study. Most of the disorders were seen between 1 to 5 years of age. The most common dermatoses were bacterial infections (26.21 %) and infestations (13.70 %) followed by viral and fungal infections (11.96 %, 11.41 %). Seasonal variation among childhood dermatoses were also noted during summer and winter. Total of 996 patients were included in the study. Most common dermatosis seen among children during summer were bacterial infections (41.16 %) followed by miliaria (12.55), viral and fungal infections (11%), napkin dermatitis (10.84) and infestations (9.63). During winter most common dermatosis seen were infestations (26.26 %), seborrheic dermatitis (24.45%), bacterial and fungal infections and pityriasis alba (9.31 %). Among other dermatoses seen were papular urticaria, vitiligo, alopecia areata, papulosquamous disorders, acne and genetic disorders (0.76 %).

**Conclusion:** In the present setting bacterial infections and infestations are the most common pediatric dermatoses followed by viral and fungal infections and eczematous eruptions.

**Key words:** Dermatoses, season, pediatric dermatoses.

### Introduction

Skin diseases are common in children and are encountered frequently. The presentation and spectrum of diseases among children are unique.<sup>1</sup> Children with skin diseases are attended by pediatricians and dermatologists worldwide.<sup>2,3</sup> Dermatological problems constitute at least 30 % of all outpatient visits to a pediatrician and 30 % of all visits to a dermatologist involve children.<sup>4</sup> One study reported that more than 65% of children consult a physician for a skin problem by 5 years of age and various other studies have reported the incidence of cutaneous disorders in children to be 9 to 37 %.<sup>1,5</sup>

Some of the skin ailments in children are transitory and require only a single or a few visits to the dermatologist, whereas others

are chronic and recurrent and thus require more frequent follow-up.<sup>5,6</sup> Different types of dermatoses have psychological impact on the child and parents. Dermatologic conditions in children also pose a special dilemma to primary care physicians and pediatricians.<sup>7,8</sup> To efficiently plan the health services for a given community, it is mandatory to have a fair idea about the existing ailments in the region.<sup>9,10</sup>

The pattern of skin diseases is known to differ in different countries of the world and in different regions of the same country. It's a common knowledge that type and amount of disease in any community are affected directly or indirectly by climate.<sup>11</sup> Also, different degrees of exposure to external factors may give rise to differential prevalence of dermatoses among infants, toddlers and children.<sup>11,12</sup> The literature is scanty on pattern of skin diseases in children in this part of the globe. Therefore present study was undertaken to identify the pattern of common dermatoses in this important age group.

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## Materials and Methods

The study was conducted at Department of Dermatology Pakistan Railway Hospital Rawalpindi. All the children 13 years and below attending the Dermatology outpatient department with cutaneous manifestations between the period of December 2011 to July 2012 were included in the study. A detailed history was taken; thorough clinical examination was done and was supported by investigations wherever necessary.

A total of 2357 consecutive patients were enrolled in the study. Each child's name, age, sex, and diagnosis were recorded on a proforma. Informed consent was taken from each patient. The following parameters were studied: age distribution, distribution of dermatosis according to their percentage frequency, frequency and pattern of skin diseases in different age groups, and categorization of the dermatosis under specific groups. Another parameter studied was seasonal variation among childhood dermatosis during winter and summer. Majority of patients were diagnosed clinically and special diagnostic tests were conducted in 2.6% of patients. The most common diagnostic test used was KOH mount and skin biopsy was done in 2 patients. It is generally preferred that biopsy should be discouraged as a routine procedure in children and should be used only in complicated dermatosis where clinical diagnosis is difficult.

Categorization of the dermatosis was done under various groups and results were analyzed using Microsoft excel.

## Results

A total of 2357 patients were enrolled in the study. Table I shows the age and sex distribution. There were 1037 (44%) male and 1320 (56%) female patients. The ages of the patients ranged from neonates to 13-year-old. (Table I)

To compare the pattern of dermatoses in different age groups within the pediatric population, these patients were divided into three broad age categories. These included infants (<1 years), other age group comprised children 1–5 years of age and third age group comprised of children 5–13 years of age. The largest patient population was from 1 to 5 years, they comprised 42.3% of the total number of patients. Patients more than 5 years of age constituted 35.59%, while children less than 1 year of age constituted around 20.66% of the total patients studied. (Table II).

Pattern of dermatosis and their frequencies were seen in different age groups. To simplify the data, some of the dermatosis were grouped under a broad category, for example, fungal infections covered all forms of dermatophytic infections (tinea capitis, corporis, etc). Dermatosis most frequently seen were bacterial infections (26.2%) and infestations (13.7%). Table II lists all the dermatosis in descending order of frequency. The first three dermatosis constituted about 50% of the total cases. Among other dermatosis seen were psoriasis, vitiligo, urticaria, alopecia areata, naevi, acne and genetic disorders (0.76%).

Data regarding seasonal variation in childhood dermatosis was also recorded. Seasonal variation was seen during summer and winter. A total of 996 patients were studied for dermatosis during summer from May to July 2012. Data was studied during winter from December 2012 to February 2013. Total of 773 patients were seen during winter and data was collected regarding different dermatosis. (Table III)

During summer most common dermatosis seen were infections followed by miliaria, napkin dermatitis, infestations and pityriasis alba. During winter commonest dermatosis were infestations (scabies), followed by bacterial infection, seborrheic dermatitis and pityriasis alba. (Table III).

**Table I: Demographic profile of study patients (n=2357)**

AGE	Male	Female	Total
Infants(0 to 1 year)	199	288	487
1 to 5 years	454	545	999
5 to 13 year	384	487	871
Grand Total	1037	1320	2357

**Table II. Frequency and Pattern of Dermatoses in Different Age Groups (n=2357)**

Diseases	<1 yr	1-5 yr	>5 yr	Total	Percentage of total case
Bacterial infections	98	385	135	618	26.219
Scabies/Pediculosis	44	115	164	323	13.703
Fungal infections	29	107	146	282	11.964
Viral infections	41	69	159	269	11.412
Seborrheic dermatitis/Atopic dermatitis	114	49	64	228	9.673
Napkin dermatitis	123	40	5	168	7.127
Pityriasis alba	6	99	29	134	5.685
Miliaria	17	69	42	128	5.430
Urticaria/Angioedema	7	23	82	112	4.751
Atopic dermatitis	5	37	4	77	3.266
Others	3	6	9	18	0.763

**Table III. Seasonal Variation in Childhood Dermatoses (n=2357)**

Name of the disease	SUMMER (996)		WINTER(773)	
	May-July No.of cases Having disease	%age	December-February No.of cases Having disease	%age
Bacterial infections	410	41.164	105	13.583
Scabies/Pediculosis	96	9.638	203	26.261
Fungal infections	113	11.345	81	10.478
Viral infections	110	11.044	92	11.901
Seborrheic dermatitis/Atopic dermatitis	12	1.204	189	24.450
Napkin dermatitis	108	10.843	28	3.622
Pityriasis alba	22	2.208	72	9.314
Miliaria	125	12.550	3	0.388
Total	996	100	773	100

## Discussion

Skin diseases in children are encountered frequently and their characterization is essential for the preparation of academic, research and health plans.<sup>11</sup> The pattern of skin diseases in any geographic area are affected directly or indirectly by climate, external environment, dietary habits and socioeconomic status.<sup>11,12</sup>

In the present study the most common dermatosis seen were infections and infestations comprising about 63.2 % of patients. Various studies have reported them occurring in the range of 35.6 % to 85.2 %.<sup>13,14</sup> Bacterial infections were most frequent (26.21%) in the category of infections/infestations. Various studies have reported them occurring in range of 11.4 to 54 % showing the variable trends in different populations.<sup>15,16</sup> Scabies was common among infestations and it highlights the varying trends with a higher prevalence from studies from Africa, China, India<sup>16,17</sup> and lower prevalence from the West showing improved level of hygiene.<sup>18</sup> Among the fungal infections tinea capitis was most common, similar to some other studies.<sup>19</sup> Among viral infections viral warts were the most common. They were more prevalent in school children, which is probably related to an increase in outdoor and sports activities in this age group.<sup>19,20,21</sup>

The high incidence of infection and infestations could possibly be due to poverty, overcrowding, under nutrition, poor hygiene and lack of health education. Hot and humid climate of this region could have favoured higher incidence of infections.

Among eczemas seborrheic dermatitis was the commonest form (9.67 %). However, many times it becomes difficult to differentiate atopic dermatitis in infancy from infantile seborrheic dermatitis so they were classified together. That is in accordance with another study (13 %).<sup>22</sup>

Seasonal variation among childhood dermatosis were also noted during summer and winter. Total of 1769 patients were included in the study. Most common dermatosis seen among children during summer were infections (bacterial, viral and fungal) followed by miliaria (12.55%). Among infections impetigo was most common during the summer. High temperature and humidity of summer season favors rapid proliferation of pyogenic bacteria, hence high prevalence of bacterial skin infections. Other dermatosis seen commonly in summers were napkin dermatitis (10.84 %) and infestations (9.63 %). This is in accordance with other studies.<sup>21,22</sup> During winter most common dermatosis seen were infestations (26.26 %), seborrheic dermatitis (24.45%), bacterial and fungal infections and pityriasis alba (9.31 %). Among other dermatosis seen were papular urticaria, vitiligo, alopecia areata, papulosquamous disorders, acne and genetic disorders (0.76 %).

The first large epidemiologic survey of skin diseases was conducted in 1974 with an analysis of 10,000 patients from South Africa.<sup>23</sup> In the western world, skin problems among children contribute to about one-third of all consultations in pediatricians' offices. A few similar studies have been performed previously from other regions and from Pakistan.<sup>24,25,26</sup>

Most pediatric dermatologic diagnoses do not require investigations as evidenced by our study where only a few of dermatoses were investigated. Skin scraping for KOH was the most common investigation carried out in our study. Of the patients referred from the other departments, a majority were from pediatricians (82 %) followed by surgery and other departments.

In summary, this study has shown that majority of skin diseases seen in our setup are from a few categories, mainly infections, infestations and various eczematous

disorders. The percentage frequency of various dermatoses not only represents the distribution of skin diseases within a region but gives a fair basis on which to decide future health plans, health education, and research activities.

Prospective epidemiologic surveys carried out in outpatient clinics form an important aid in understanding the spectrum of skin diseases in the region and form a basis for planning the future health care, s. Only a few surveys of a similar kind in the pediatric age group are available in the literature. Our study revealed a preponderance of infectious dermatosis and infestations that one would expect in a tropical pediatric dermatology clinic.

Therefore, it seems necessary to ensure that the dermatologic education of medical students, primary care physicians, and pediatricians focuses on accurate recognition, diagnosis, and management of these common skin diseases.

### Conclusion

To conclude, skin diseases have great psychological impact and children, being more sensitive and vulnerable, are affected more severely. In order to plan better health care for children, it is mandatory to have a fair idea about the existing ailments in the region. In the present study we have attempted to acquire sufficient information regarding the skin ailments in our region. More surveys of a similar kind are required from different regions in order to study the spectrum of pediatric dermatology problems.

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