

## Original Research Article

# Clinical spectrum of childhood dermatoses during peak summer in a tertiary care centre

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### ABSTRACT

**Background:** Paediatric dermatoses are very common and may reflect the health and hygiene status of children. The incidence of these skin lesions is widely influenced by seasonal factors. The aim of the study was to study the spectrum of various dermatoses in summer months in children in a tertiary health care centre in north Chennai.

**Methods:** The study included all paediatric cases up to 12 years of age attending the skin OPD of our hospital during the month of May 2018. Total numbers of patients were 975. The patients were divided into 4 categories -infants (< 1 year), toddlers (1-3 years), pre-school children (3-5 years), school going children (5-12 years) as A, B, C and D respectively.

**Results:** Number of children seen in different groups included infants (8.20%), toddlers (23.59%), pre-school children (22.67%), school going children (45.54%) in groups A, B, C and D respectively. The most common skin disease observed comprised of pyoderma (44.18%), followed by miliaria rubra, scabies, dermatophytosis, insect bite allergy, HFMD and others with less than 1% prevalence.

**Conclusions:** The study shows that infections were more common in the paediatric age group in summer, which can provide a suitable environment for the organisms to survive and the infections can be controlled easily by providing proper health care facilities. In order to plan better health care for children, it is mandatory to have a good idea about the existing ailments in the region.

**Keywords:** Pyoderma, Paediatric dermatosis, Summer dermatosis, Seasonal variation

### INTRODUCTION

With the growing trend in the population, the majority is comprised by the paediatric age group which constitutes about 30%.<sup>1</sup> The paediatric dermatosis in school-based surveys in India ranged from 4.3% to 49.1%.<sup>2</sup> Seasonal variation in a geographical variation plays a significant role in the varying patterns of disease manifestation of which summer stays to be associated with the peak incidence of certain dermatological conditions.<sup>3</sup> Owing to the lower socio-economic status of the people, there is interplay of numerous social factors which brings about

the logarithmic phase of growth in the incidence and prevalence of skin diseases among them.<sup>4</sup> Paediatric age group stays to be the most vulnerable among them, with additional influence of nutritional deficiency and hampered immunity, thus making us give the limelight to that population.

#### Objective

The objective was to study the clinical spectrum of paediatric dermatoses in age group of 0-12 years during peak summer in North Chennai.

## METHODS

This study is a prospective study including all new paediatric cases up to 12 years of age attending the skin OPD of Government Stanley Medical Hospital during the month of May 2018. Total number of patients included in our study was 975. Informed and written consent was obtained. Detailed clinical history and complete general and dermatological examination was done. Clinical photographs were taken. The patients were divided into 4 categories as Infants (<1 year), toddlers (1-3 years), pre-school children (3-5 years), school going children (5-12 years) as A, B, C and D respectively. Age, sex and disease distribution was analysed and tabulated.

### Inclusion criteria

Inclusion criteria were all paediatric patients attending dermatology OPD; patients willing to be examined and willing to give consent and photographed.

### Exclusion criteria

Exclusion criteria were patients not willing for diagnostic tests; patients not willing to be examined.

### Analysis

After collecting, the data will be compiled and entered in Microsoft Excel sheet. Analysis will be done using statistical software SPSS version 16. All continuous variables will be expressed as mean and standard deviation. All categorical variables will be expressed as percentages and proportions.

## RESULTS

The total number of patients in our study is 975. Female children predominated the study. Male children constituted about 49% (n=477) and female children constituted about 51% (n=498) (Table 1).

**Table 1: Sex distribution.**

Sex	Number	Percentage (%)
<b>Males</b>	477	48.92
<b>Females</b>	498	51.08
<b>Total</b>	975	100

In our study, School going children constituted majority of the group with about 45% (n=444), followed by toddlers with about 24% (n=230), preschool children with about 23% (n=221) and infants with about 8% (n=80) (Table 2). Females were outnumbered by males only in infancy category.

In our study, infection was predominant with 533 cases (54.64%), followed by miliaria with 210 cases (21.54%), infestations (scabies & pediculosis) with 163 cases

(16.72%) and others 69(7.08%) (Table 3). However, the pattern of dermatoses did show variation in each age group.

**Table 2: Age distribution.**

Age category (years)	No of children	Percentage (%)
<b>Infants (0-1)</b>	80	8.20
<b>Toddlers (1-3)</b>	230	23.59
<b>Preschool (3-5)</b>	221	22.67
<b>School (5-12)</b>	444	45.54

**Table 3: Spectrum of diseases.**

Disease	Number	Percentage (%)
<b>Infections</b>	533	54.64
<b>Miliaria</b>	210	21.54
<b>Scabies and pediculosis</b>	163	16.72
<b>Insect bite allergy</b>	32	3.28
<b>Photo dermatosis</b>	11	1.13
<b>Seborrheic dermatosis</b>	7	0.72
<b>Papulo squamous disorders</b>	7	0.72
<b>Eczemas</b>	4	0.41
<b>Pityriasis rosea</b>	2	0.21
<b>Pigmentary disorders</b>	2	0.21
<b>Hair and nail disorders</b>	2	0.21
<b>Nutritional disorders</b>	2	0.21

**Table 4: Spectrum of infections.**

Infection	Number	Percentage (%)
<b>Bacterial</b>	431	44.18
Impetigo	261	26.77
Folliculitis	62	6.31
Furunculosis	62	6.31
Abscess	08	0.78
Perioritis	38	3.94
<b>Viral</b>	52	5.34
HFMD	23	2.37
Chicken pox	10	1.03
Wart	09	0.92
Molluscum contagiosum	07	0.72
Herpes zoster	03	0.31
<b>Fungal</b>	50	5.13
Dermatophytosis	42	4.34
Pityriasis versicolor	08	0.82

In our study, among the spectrum of infections, bacterial infections were the most common with 431 cases (44.18%), followed by viral infections with 52 cases (5.34%) and fungal infections with 50 cases (5.13%).

Viral infections included Hand foot mouth disease (HFMD) which dominated the viral infection group with 23 cases followed by chicken pox (10), Wart (9), Molluscum contagiosum (7) and Herpes zoster (3). Fungal infections included Dermatophytosis and Pityriasis versicolor with 42 cases and 8 cases respectively (Table 4).

Primary pyoderma predominated the spectrum with 29.33% (286) followed by secondary pyoderma (14.87%) (Table 5). Few dermatoses like scabies, miliaria were complicated by secondary pyoderma.

**Table 5: Spectrum of pyoderma.**

Pyoderma	Number	Percentage (%)
Primary	286	29.33
Secondary	145	14.87

In our study, bacterial infections were predominant in the age group 1-3 years followed by school going children. All other dermatoses were predominant in school going children (Table 6).

**Table 6: Age-disease distribution.**

Disease	0-1 year	1-3 years	3-5 years	5-12 years	Total	%
Bacterial infections	49	141	101	140	431	44.18
Viral infections	8	13	13	18	52	5.34
Fungal infections	0	4	18	28	50	5.13
Infestations	9	23	29	102	163	16.72
Miliaria	10	36	45	119	210	21.54
Insect bite	0	10	5	17	32	3.28
Photo dermatosis	0	1	3	7	11	1.13
Seborrheic dermatitis	1	1	1	4	7	0.72
Papulosquamous disorders	0	0	2	5	7	0.72
Eczema	2	1	0	1	4	0.41
Pityriasis rosea	0	0	1	1	2	0.21
Pigmentary disorders	1	0	1	0	2	0.21
Hair & Nail disorders	0	0	1	1	2	0.21
Nutritional disorders	0	0	1	1	2	0.21



**Figure 1: (A) Herpes zoster, (B) impetigo, (C) HFMD, (D) molluscum contagiosum.**

**DISCUSSION**

Dermatosis in paediatric age group indirectly reflects the interplay of various external factors like seasonal variation, endemicity of any disease, poverty, overcrowding and internal factors like host immune status, malnourishment, vaccination status etc. Our study was conducted in a tertiary care centre in North Chennai where the case load is most commonly contributed by slum dwellers, under poverty line and malnourished. As there is varying array of skin manifestations in children due to numerous reasons, seasonal variation plays a significant role in exacerbating certain dermatosis which is reported by Sabyasachi et al.<sup>3</sup>

Our study was conducted in May 2018, which is a peak summer and along with the contribution of numerous external factors. In our study, females were more commonly affected (51.08%) than male (48.92%) which is in concordance with Reddy et al.<sup>5</sup> Narasimha et al study showed increased prevalence of dermatosis among the male patients than the female patients with the ratio of 1.27:1.<sup>4</sup>

In our study, School going children were more commonly affected (45.54%, n=444), which may be due to increased contact with the infected children which is similar to that

reported by Sacchidanand et al followed by toddlers with about 24% (n=230), preschool children (23%, n=221) and infants (8%, n=80).<sup>6</sup>

Infections were the commonest reported dermatosis in Gunjana et al study (59.2%) which is nearly similar to our study (54.64%).<sup>7</sup> Figueroa et al reported skin infestations to be more common among school children in rural Ethiopia.<sup>8</sup> The high prevalence of pyogenic bacterial skin infection (40.27%) was reported by Sabyasachi et al study and also by Ghosh et al (35.6%).<sup>9</sup> According to Dagan, impetigo is the most common childhood skin infection which is also the same in our study (26.77%).<sup>10</sup> Pyogenic infections are exacerbated more in the summer months due to the favourable temperature and humidity for its proliferation and dissemination.

Karthikeyan et al study reported secondary pyoderma as 17.9% which is similar to our study 14.87%.<sup>11</sup> Balai et al reported secondary pyoderma as 3.8%.<sup>12</sup> Secondary pyoderma complicates conditions like miliaria, scabies, pediculosis. Lack of awareness and delay in seeking treatment among the people may be responsible for secondary pyoderma.

Eczema was the second most common manifestation in Medasani et al study which is reported to be 11.05% which is significantly less in our study to be 0.41%.<sup>13</sup> The second most common dermatosis in our study was miliaria (21.54%) which is in accordance with the Khalid et al where miliaria is the second most common dermatosis in summer month, second only to Bacterial infections, highly favouring the observation in our study.<sup>14</sup> Miliaria was found to be the most prevalent manifestation in school going children in our study (n=26.80%).

Molluscum contagiosum was the most commonly reported viral infection in Jawade et al study which is reported as 5.39% which is significantly less in our study (0.72%).<sup>15</sup> The most common viral infection in our study was Hand foot mouth disease (2.37%). Nagarajan et al study reported HFMD as one of the common viral infection (4%).<sup>16</sup> We reported 3 cases of Herpes Zoster in our study (0.31%). Jawade et al and Medasani et al study reported 2 cases (0.22%) and 1 case (0.23%) of zoster respectively.<sup>13,15</sup>

Medasani et al study reported fungal infections as the predominant paediatric dermatosis (27.88%) which is significantly less in our study (5.13%).<sup>13</sup> Dermatophytosis contributed to 4.34% of cases. Lower incidence of fungal infections was attributed to sweat gland maturation and increased use of OTC products.

Sharma et al study reported scabies as the most common infestation (14.33%) which is similar to our study (16%).<sup>17</sup> We reported 7 cases of pediculosis (0.72%).

Reason being lack of good hygiene and lower socio-economic status and overcrowding.

Other cases included polymorphic light eruption (11), atopic dermatitis (3), psoriasis (3), pityriasis rubra pilaris (2), lichen planus (2), juvenile plantar dermatosis (1), pityriasis rosea (2), Mongolian spot (1), vitiligo (1), acrodermatitis enteropathica (1), phrynoderma (1), alopecia areata (1) and traumatic nail dystrophy (1).

This study has outlined the most common dermatoses in paediatric age group. Due to limited time, seasonal variation could not be studied. Such studies covering longer duration may be required to understand the influencing factors and variations in paediatric dermatoses.

## CONCLUSION

Paediatric dermatoses cause significant morbidity in children. Infections were the most commonly reported dermatoses in peak summer in our study which may be attributed to over-crowding, malnutrition, lack of personal hygiene, poor sanitation. Infections can complicate other dermatoses which poses an additional threat. Non-infectious dermatoses must be referred to dermatologist's opinion. Early diagnosis and prompt management of common dermatoses at the root level can prevent infective complications and prevent antibiotic over usage. Health education with awareness and measures to improve hygiene and sanitation must be undertaken to reduce morbidity due to paediatric dermatoses.

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