

## Pattern of Pediatric Dermatoses in a Tertiary Care Centre in Karnataka

Bangaru H<sup>1,\*</sup>, Nanjundaswamy BL<sup>2</sup>

<sup>1</sup>Assistant Professor, <sup>2</sup>Professor, Mysore Medical College & Research Institute, Mysore

\*Corresponding Author:

Email: drbangaruskin@gmail.com

### Abstract

**Background:** Skin diseases are major health problem in the pediatric age group and it reflects the status of health, nutrition, hygiene and personal cleanliness of a community.

### Objective:

1. To estimate the proportion of pediatric skin diseases.
2. To estimate and test the impact of age and sex on pediatric skin diseases
3. To prioritize the condition of skin diseases among pediatric age group.

**Inclusion criteria:** All cases registered in outpatient records aged 0-18 years.

**Exclusion criteria:** None.

**Materials and Methods: Study design:** Retrospective study.

Retrospective collection of data from the out patient records, of all children aged 0-18 years, who had attended as out-patient, in dermatology out-patient department, in Krishna Rajendra Hospital, Mysore, Karnataka. The diseases will be tabulated based on age, sex and etiology and results will be analysed.

**Sample size:** With the incidence of pediatric dermatoses 9-37%, level of significance 5%, absolute allowable error 5%, using confidence interval approach, the sample size is 131-373. However, over a period of six months, 3753 pediatric case sheets have been considered for the study.

**Statistical method:** Objective 1 is analysed through frequency and proportion, objective 2 is analysed through bivariate frequency technique using frequency, chi-square test and object 3 is addressed through frequency technique.

**Results:** Out of 16500 out patients 3753 were children aged 0-18 years. Males (1984) were slightly more than females (1769) with male to female ratio of 1.12:1. Majority of children belonged to the age group 10-18 years (2510 cases-66.9%). The majority of dermatoses (41.87%-1611cases) belonged to infection and infestations group followed by acne vulgaris (20.87%-803cases) and dermatitis and eczemas (15.44%-594cases).

**Conclusion:** Our study provides a detailed information of epidemiological and clinical pattern of dermatoses in pediatric age group, showing infection and infestations as the commonest dermatoses and it also enlightened the change of trend in pediatric dermatoses, such as fungal and viral infections overtake the bacterial infections among infections. Acne was the second most common dermatoses.

**Keywords:** Infections, Infestations, Scabies, Eczema and Acne.

### Introduction

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> The status of health, hygiene and personal cleanliness of a society can be judged from the prevalence of certain skin diseases in children of the community.<sup>[2]</sup>

Dermatological problems constitute at least 30% of all outpatient visits to a paediatrician and 30% of all visits to a dermatologists involve children.<sup>[3,4]</sup> The pattern of skin diseases varies from country to country with pyoderma and malnutrition being more prevalent in developing countries, while eczemas are more common in developed countries.<sup>[5]</sup>

The incidence of skin diseases in children has been reported to be 9-37% in various studies.<sup>[6]</sup> Majority of dermatoses belong to infections, followed by eczematous and hypersensitive disorders. Of the infections and infestations, bacterial infection is the most common followed by scabies, fungal and viral infection.<sup>[6]</sup>

This study is aimed to estimate the proportion of pediatric skin diseases, its impact on age and sex, and the pattern of dermatological conditions in pediatric cases among dermatology out patient.

### Results

During July to December 2015 a total of 16500 out patients were examined, 3753 were children aged 0-18 years. Males (1984) were slightly more than females (1769) with male to female ratio of 1.12:1. Majority of children belonged to the age group 10-18 years(2510 cases-66.9%). The age and sex distribution are as shown in Table 1.

Some of the patients had more than one dermatoses, total of 3847 dermatoses were recorded. The majority of dermatoses (41.87%-1611cases) belonged to infection and infestations group followed by acne vulgaris (20.87%-803cases) and dermatitis and eczemas (15.44%-594cases). The patterns of other dermatoses are shown in Table 2.

Among the various infections and infestations, scabies was the most common entity (14.08%-542cases)

followed by fungal infections (12.52%-482cases). Out of various fungal infections tinea corporis (6.16%-237cases) was the most common followed by pityriasis versicolor (4.2%-162 cases). Among bacterial infections, impetigo (3.46%-133cases) was the most common entity followed by secondary pyoderma (2.54%-98cases). Warts (4.31%-166 cases) was the most common viral infection followed by molluscum contagiosum (3.17%-122 cases). Table 3 shows distribution of infections.

The other disorders included under 'other' category are polymorphic light eruption(90), xerosis (45), topical steroid damaged face(19), keloid&scars(18), aphthous ulcer(14), keratolysis exfoliativa(13), intertrigo(12), macular amyloidosis(9), actinic chielitis(9), skin tag & dermatoses papilosa nigra(7), nevus(5), pyogenic granuloma(5), acanthosis nigricans(5), morphea(3), pitted keratolysis(3), corn(3), perioral dermatitis(3), lymphangioma circumscriptum(2), burns(2), hemangioma(1), kawasaki disease(1), dermatitis herpetiformis (1), parapsoriasis(1), lichen striatus(1) and trophic ulcer(1).

**Table 1: Age and Sex wise distribution of Pediatric Dermatoses (n=3753)**

Age	Male(%)	Female(%)	Total(%)
0-1	26(0.7)	27(0.7)	53(1.4)
1-4	272(7.2)	267(7.1)	539(14.4)
5-9	336(9)	315(8.4)	651(17.3)
10-18	1350(36)	1160(30.9)	2510(66.9)
Total	1984(52.9)	1769(47.1)	3753

**Table 2: Distribution of various pediatric dermatoses (n=3753)**

Dermatoses	Male	Female	No. Cases(%)
Infections & infestations	792	819	1611 (21.15)
Dermatitis & Eczema	305	289	594 (15.44)
Acne vulgaris	359	444	803 (20.87)
Pigmentary disorders	34	24	58 (1.50)
IBR	106	62	168 (4.36)
Urticaria	37	51	88 (2.28)
Psoriasis	10	11	21 (0.54)
Lichen planus	13	6	19 (0.49)
Genetic disorders	7	0	7 (0.18)
Hair & nail disorders	36	53	89 (2.31)
Pityriasisrosea	5	12	17 (0.44)
Drug reaction	2	2	4 (0.10)
PML	51	39	90 (2.33)
Collagen vascular disease	0	2	2 (0.05)
Keratinization disorders	50	45	95 (2.46)
Others	98	85	183 (4.75)

**Table 3: Pattern of Infections & infestations (n=1611)**

Pyoderma	240 (6.22 %)
Secondary pyoderma	98 (2.54)
Impetigo	133 (3.46)
Hansen's disease	4 (0.10)
SSSS	1 (0.02)
Cellulitis	4 (0.10)
Infestations	554 (14.40%)
Scabies	542 (14.08)
Pediculosis capitis	12 (0.31)
Fungal Infections	482 (12.52%)
Tinea Capitis	81 (2.10)
Tinea Corporis	237 (6.16)
Pityriasis Versicolor	162 (4.21)
Candidiasis	02 (0.05)
Viral Infections	335 (8.70%)
Molluscum contagiosum	122 (3.17)
Warts	166 (4.31)
HSV	3 (0.08)
H. Zoster	7 (0.18)
Varicella	6 (0.15)
Viral Exanthem	15 (0.39)
HFMD	16 (0.41)

## Discussion

The pattern of skin disease is very much influenced by climate, external environment, dietary habits and socioeconomic status.<sup>[5]</sup> Pattern of pediatric dermatoses varies from different parts of the world. The present study enlightened the pattern of pediatric dermatoses from a tertiary care centre in Karnataka.

In our study, majority (41.87%) of dermatoses belonged to infection and infestation group. Many studies from India revealed the similar findings.<sup>[6,7,8]</sup> The second common condition in our study was acne vulgaris (20.87%) followed by eczema and dermatitis(15.44%). However most of the Indian studies reported eczema and dermatitis as the second common condition.<sup>[6,7,8]</sup> In a study from Libiya has also observed that infection and infestations as most common followed by eczema.<sup>[9]</sup> In our study since the majority (2510 cases-66.9%) of patients belonged to 10-18 years age, which is common age for acne we have observed acne as the second most common condition. In a study from Turkey, reported acne vulgaris as the third most common(14.5%) dermatoses<sup>[10]</sup> and many other studies observed variable findings as 4.5%-2.4%.<sup>[11,12,13,14]</sup>

In our study, of infection and infestations scabies was the leading condition(14.08%). Similar finding was observed by Sharma RC.<sup>[15]</sup> Followed by fungal infection (12.52%), viral infection (8.70%) and bacterial infections(6.23%). Sayal<sup>[5]</sup> reported similar observation that is fungal infection as most common, among infections and Wenk and Itin observed viral infection outnumbered bacterial infections.<sup>[11]</sup> Tinea corporis (6.16%) was the most common fungal infection followed

by pityriasis versicolor(4.21%). Wart(4.31%) was the commonest viral infection followed by molluscum contagiosum(3.17%) similar to other studies.<sup>[9,16]</sup>

Eczema (15.44%) was the third most common dermatoses in our study. Several Indian studies observed eczema as the second common condition.<sup>[6,7,8]</sup> Of eczema group atopic dermatitis(4.08%) was the commonest, as many other studies have reported.<sup>[9,11,16]</sup> Followed by pityriasis alba (3.66%) and seborrheic dermatitis(2.4%). Most of the developed countries have shown eczema as the most common dermatoses in pediatric age group.<sup>[12,13,17]</sup> However Sardana has reported infantile seborrheic dermatitis as more common compared to pityriasis alba and atopic dermatitis.<sup>[8]</sup> The incidence of eczema primarily depends upon genetic constitution, individual predisposition and environmental allergens.

Papular urticaria and insect bite reaction was the commonest(4.36%) hypersensitive disorder followed by urticaria (2.28%). Similar to other studies.<sup>[5,8]</sup> In a study from Libiya, reported high incidence rate of insect bite reactions of 9.6%.<sup>[9]</sup>

Psoriasis was seen in 0.54% cases in our study, karthikeyan reported 1.4%.<sup>[7]</sup> Hair and nail disorders were seen in 2.31% similar to other study.<sup>[7]</sup>

Our study provides a detailed information of epidemiological and clinical pattern of dermatoses in pediatric age group and showed that, infection and infestations as the commonest dermatoses and it also enlightened the change of trend in pediatric dermatoses, such as fungal and viral infections overtake the bacterial infections among infections. Acne was highest among all dermatoses as an individual condition, as it is the common condition in this age group especially 12-18 years and the new generation is more beauty and cosmetic oriented which brings them to dermatologist early and scabies was the second highest individual dermatoses as many schools, colleges, hostels and residential schools are located in this region. Health education and creating awareness targeting above risk group may help in control and management of above conditions.

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