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Original Reseach Article

Clinical Spectrum of Dermatological Disorders in Children Attending Pediatric Outpatient Department of an Industrial (Railway) Hospital, New Delhi

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Abstract

Objective: To determine the clinical spectrum of dermatological disorders in children attending the pediatric outpatient department (OPD) of an industrial (Railway) hospital, New Delhi.

Materials and Methods: The study was undertaken for a period of 18 months. Pediatric patients in the age group 1–14 years attending the OPD in pediatrics and dermatology for skin disorders or children with some other clinical complaints with associated skin disorders, at a tertiary care Railway hospital in Delhi, were examined. A detailed history and physical examination were done to diagnose the skin lesions. All the information was collected on a specially designed proforma.

Results: A total of 210 children with skin diseases, 111 (52.85%) males and 99 (47.14%) females were seen. Infectious skin disorder (20.9%) was the most common skin disorder, followed by seborrheic dermatitis (15.7%) and infestation such as scabies and pediculosis (9.5%). The most common infectious skin disorder was bacterial (54.54%), followed by viral (9.54%) and fungal (15.9%).

Conclusion: Infectious skin disorders were seen as the most common pediatric dermatoses, followed by seborrheic dermatitis and infestation.

Key words: Clinical spectrum, Fungal infections, Infestation, Pediatric dermatoses, Viral infections

INTRODUCTION

Skin diseases are a major health problem in the pediatric age group and are associated with significant morbidity.[1] They are common all over the world, as the skin of children is more prone to developing diseases.[2] Skin diseases constitute 30% of all outpatient visits to a pediatrician, and 30% of all visits to a dermatologist involve children.[1]

There is variation in the pattern and presentation of dermatoses, with eczemas being the most common skin disorder in developed countries and infections and infestations in developing countries.[3]

The evaluation for skin disorders is an important component of primary health care practice.[4] Skin is often a window to underlying systemic diseases and a marker of hereditary syndromes.[5] Childhood may be a marker for environmental risks.[6] We can judge the status of health, hygiene, and personal cleanliness of people in society by seeing the prevalence of certain diseases in children of the community.[7]

Skin diseases in children are prevalent in rural areas as compared to urban areas due to poor socioeconomic status, overcrowding, poor personal hygiene, lack of general awareness, education, sanitation, and specialized health facilities.[8]

The course of skin diseases in the pediatric age group varies. It can be short-lived or chronic and recurrent.

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The chronic dermatoses are associated with significant morbidity and psychological impact.[1]

Pediatric dermatoses should be reviewed distinctly from adult dermatoses, as there are important differences in clinical presentation, treatment, and prognosis.[1]

Skin diseases in children are encountered frequently, and their characterization is essential for the preparation of academic, research, and health plans. The evaluation for skin disorders is an important component of primary health care practices.[9] The data about the pediatric population in our country are scarce. Moreover, the environment has a profound effect on the prevalence of dermatoses.[6] The changing environmental factors (e.g., pollution and urbanization) are associated with various cutaneous diseases (e.g., eczemas). Therefore, it is expected that the frequency of pediatric dermatoses has changed over the last few years. Most of the time, children are treated by pediatricians rather than dermatologists. The results of the present study will be helpful for both the pediatrician and dermatologists by knowing the most frequent pediatric dermatoses, and help in taking steps in the management of patients. There is an obvious need for diagnostic and therapeutic training for pediatricians in managing dermatological disorders.

Aims and Objectives

Aims

To study the clinical spectrum of dermatological disorders in children attending the pediatric outpatient department (OPD) of an industrial (Railway) hospital, New Delhi.

Objectives

1. To assess the pattern of skin diseases in pediatric patients (1–5 years and 5–14 years age) attending a tertiary care hospital in the National Capital region
2. To study the distribution of skin diseases based on age, sex, and etiology.

MATERIALS AND METHODS

The study was undertaken for a period of 18 months. Pediatric patients in the age group 1–14 years attending the OPD of pediatrics for skin disorders or children attending the pediatrics OPD for some other clinical complaints with skin disorders, at a tertiary care Railway hospital in Delhi, were included in the study. Children with life-threatening illnesses were excluded.

A total of 6114 patients attended the pediatrics OPD during the study period. Out of 6114 patients, 550 patients in the age group 1–14 years presented with skin disorders for the 1st time. Thus the percentage of pediatric patients presenting with skin disorders was 8.99% (Table 1). Out of 550 patients, 160 patients were lost to follow-up, and 180 patients were not willing to participate in the study. Hence, a total of 210 patients were enrolled in the study. Ethical Clearance was obtained from the Ethical Committee.

Informants were parents or guardians accompanying the children. After taking informed consent, a detailed history about the onset, duration, and evolution of lesions was taken. All patients were subjected to general physical examination, cutaneous examination including nail, hair, genitalia, mucosae, and systemic examination to note down associated diseases. Findings were documented in a proforma. The results of the study were tabulated, analyzed, and discussed.

Simple proportions and percentages for comparing different variables, such as age and sex, were used. The final outcome was expressed as the percentage of individual skin disorders among the study group as a whole. The correlation between quantitative values was assessed using Pearson's correlation coefficient and a simple linear regression model. $P < 0.05$ was considered statistically significant.

RESULTS

There were a total of 210 patients in this study. In our study, 34 children (37.4%) were in the age group 1–5 years, and 136 children (64.76%) were in the age group 5–14 years. There were 111 (52.85%) male patients and 99 (47.1%) female patients. Out of 210, there were 44 (20.9%) children who suffered from infection, and 33 (15.7%) children had Seborrheic dermatitis. Infestation (scabies and pediculosis) was present in 20 (9.5%) patients, and lichen striatus in 19 (9.04%) patients. Table 2 enlists the frequency of different pediatric dermatoses.

In this study, out of the infection group, 24 (11.4%) patients had bacterial infection, 13 (6.1%) had viral infection, and 7 (3.3%) patients suffered from fungal infection. Out of the total bacterial infections, 11 (5.2%) patients had impetigo, 4 (1.9%) had folliculitis, and 4 (1.9%) patients had furunculosis. Among viral diseases, molluscum contagiosum was seen in 8 (3.8%) patients, followed by warts in 1 (0.4%), chickenpox in 1 (0.4%), herpes zoster in 1 (0.4%), and hand, foot, and mouth disease in 1 (0.4%) patient. Out of patients suffering from fungal infections, 3 (1.4%) patients had dermatophytosis, and 4 (1.9%) patients had pityriasis versicolor. Other dermatoses in our study included, Lichen striatus in 19 (9.04%) patients, pityriasis rosea in 18 (8.5%) patients, lichen planus in 15 (7.1%) patients, miliria in

Table 1: The percentage of pediatric dermatosis

Total No. of outpatients attending department of pediatrics during the study period	Number of pediatric patients with skin disorders attending department of pediatrics during the study period	Number of pediatric patients with skin disorders enrolled in the study	Percentage of pediatric patients with skin disorders
6114	550	210	(550/6114)×100=8.99

Table 2: The frequency of different pediatric dermatoses in the study

Pediatric dermatoses	*n*	Percentage
Infections	44	20.9
Seborrheic dermatitis	33	15.7
Scabies and pediculosis	20	9.5
Lichen striatus	19	9.04
Pityriasis rosea	18	8.5
Lichen planus	15	7.1
Miliria	14	6.6
Lichen nitidus	7	3.3
Psoriasis vulgaris	6	2.8
Insect bite allergy	6	2.8
Eczema	6	2.8
Photodermatitis	6	2.8
Atopic dermatitis	4	1.9
Nevus	4	1.9
Vitiligo	4	1.9
Alopecia areata	4	1.9
Total	210	100

14 (6.6%) patients, lichen nitidus in 7 (3.3%) patients, psoriasis vulgaris in 6 (2.8%) patients, insect bite allergy in 6 (2.8%) patients, photodermatitis in 6 (2.8%) patients, atopic dermatitis in 4 (1.9%) patients, nevus in 4 (1.9%) patients, vitiligo in 4 (1.9%) patients, and alopecia areata in 4 (1.9%) patients.

DISCUSSION

The pattern of skin diseases in the pediatric age group may vary from one country to another and within the same country from one state to another due to various climatic, cultural, and socioeconomic factors.[3] This study was conducted in a railway hospital, with a sample of 210 patients.

In our study, the age group of 5–14 years constituted the maximum (64.76%) number of pediatric patients. Sacchidanand *et al.*[10] observed that 5–11 years is the common age group, followed by adolescents with 33.21% and 29.81%, respectively. Sharma *et al.* reported that pediatric dermatoses are more common in the adolescent age group.[7]

Male patients outnumbered the female patients (52.85%) in our study, contrary to that of Karthikeyan *et al.* and Ferreira *et al.*, who also reported female predominance (57.2%).[11,12]

Infections and infestations were the most common dermatoses encountered, which were seen in 30.4% of the total cases. Our findings were similar to the study by Sacchidanand *et al.* and Bisht *et al.*, which showed 32.47% and 36.46%, respectively.[10,13] Negi *et al.*, Sharma *et al.*, Bhatia, and Ghosh *et al.* have reported infections as the most common dermatosis, occurring in the range of 35.6–85%.[14-17]

Scabies alone constituted the majority of infestation, making 8.5% of the total dermatoses. Sacchidanand *et al.* in their study found that the incidence of scabies was 6.97%.[10] The incidence of scabies had varied from 5.1% to 22.4% in studies done by Negi *et al.*, Sharma *et al.*, and Bhatia.[14,15,17] Pediculosis capitis was the next most common infestation.

Bacterial infections constituted 54.54% of the total infections and 11.4% of total pediatric dermatoses. Impetigo was the most common bacterial infection, with 45.83% of total bacterial infections, followed by furunculosis, folliculitis, and periporitis with 16.66% of total bacterial infections. Pyodermas were the single most common dermatoses found by Bhatia and Ghosh *et al.*[15,16]

Fungal infections of the skin constituted 15.9% of the total infections and 3.3% of total dermatoses. Tinea versicolor constituted 57.14% of dermatophytic infections and 1.9% of all dermatoses, followed by tinea cruris and tinea corporis.

The viral infections constituted 29.26% of the total infections and infestations and 6.1% of the total dermatoses of our study. Molluscum contagiosum was the most common viral disease, constituting 17.39% of these infections and 3.8% of total dermatoses.

Karthikeyan *et al.* in their study observed that the incidence of molluscum contagiosum was 2.5% in children aged 1–15.[11]

Hand-foot-mouth disease constituted 7.6% of viral infections and 0.4% of total dermatoses. The incidence of varicella was 0.9% in our study, which is similar to that reported by Karthikeyan *et al.* (0.4%).[11] The incidence

of herpes zoster was 0.4% in our study, whereas in Karthikeyan *et al.*'s study, it was 0.37%.[11]

Eczema constituted 2.8% of total cases in our study. The incidence rate of eczema in the study by Sacchidanand *et al.* was 20.66%, whereas in the Karthikeyan *et al.* study, it was 8.6%.[10,11]

Nevoid and developmental disorders constituted 1.9% of total dermatoses in this study. Thappa, in their study, observed a prevalence of 0.5%.[18] Dogra and Kumar observed a prevalence of 1.1%.[19] Congenital melanocytic nevus was the most common nevoid and developmental disorder in our study.

Psoriasis was noted in 2.8% of the cases during this study period. In accordance with Sacchidanand *et al.*, among papulosquamous disorders, psoriasis was the most common dermatosis and constituted about 4.28% of the total dermatoses.[10] Karthikeyan *et al.* reported the prevalence of psoriasis as 1.4%.[11]

Sweat gland disorders (miliaria) constituted 6.6% of dermatoses during this study period. In the study done by Karthikeyan *et al.*, the prevalence of miliaria was 4.1%.[11] Pigmentary disorders (vitiligo) constituted 1.9% of total dermatoses in our study.

Sacchidanand *et al.* reported that pigmentary disorders constituted 5.81%, and Karthikeyan *et al.* reported 5.7%.[10,11]

Abnormal response to light (photodermatitis) was seen in 2.8% of total cases in our study.

Insect bite reaction contributed to 2.8% of total dermatoses in our study.

In our study, seborrheic dermatitis was seen to have an incidence of 15.7%, boys constituted 66.66%, whereas girls constituted 33.33% of the cases. The scalp (75.8%) was the most common site to be involved. Seborrheic dermatitis affects males more often than females, according to Hebert *et al.*, similar to our study.[20]

Lichen striatus constituted 9.04% (19 cases) of dermatoses in our study. Pityriasis rosea is an acute, self-limiting papulosquamous disorder of unknown etiology with a highly characteristic morphology and clinical course. The incidence of pityriasis rosea, among all pediatric dermatoses, was higher, i.e., 8.5% in our study, which is similar to the incidence seen in other pediatric studies.

Lichen planus is a unique common inflammatory disorder of unknown etiology. The frequency of lichen planus varies from 2.1% to 11.2% in the pediatric population.[21] In our study, lichen planus was seen in 7.1% of cases, which was high when compared with the study by Handa *et al.*, where children with lichen planus formed 2.5% of the total number of pediatric dermatology patients during 12.5 year period of observation.[21]

Lichen nitidus is a clinically and pathologically distinct inflammatory disorder commonly occurring in children. In our study, 7 (3.3%) children presented lichen nitidus.

Our study had a few limitations. It was conducted in a single center, and the sample size was small. A large, prospective multicentric study needs to be conducted to know more about pediatric dermatoses.

CONCLUSION

The most common diseases were skin infections (furuncles, folliculitis, impetigo, periporitis, molluscum contagiosum, viral warts, etc.), followed by seborrheic dermatitis, lichen striatus, pityriasis rosea, eczema, and atopic dermatitis. The scalp was the most common site to be involved in seborrheic dermatitis. Infectious diseases accounted for 20.9% of all skin diseases. The most common form of skin disease was bacterial infection (11.4%).

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