

Clinical spectrum of pediatric dermatoses at a tertiary care unit

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Abstract *Objective* To determine the clinical spectrum of pediatric dermatoses at a tertiary care unit.

Methods Three hundred and fifty cases aged up to 12 years, presenting to dermatology unit I, Jinnah Hospital, Lahore with skin diseases were enrolled over a period of 6 months. 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 350 children with skin diseases, 186 (53.1%) males and 164 (46.9%) females were seen. The mean age of patients in the study was 4.18 ± 2.97 years. Infections and infestations were the common dermatoses seen in 158 (45.1%) and 105 (30%) children, respectively. Eczema was present in 79 (22.6%) patients and diseases of sweat gland in 8 (2.3%).

Conclusion Infection and infestations were seen as the most common pediatric dermatoses.

Key words

Pediatric dermatoses, clinical spectrum, viral infections, fungal infections, infestation.

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 develop 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 the 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 marker of hereditary syndromes.⁵ Childhood age may be a marker for environmental risks.⁶ We can judge 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

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The course of skin diseases in the pediatric age group varies. It can be short-lived or chronic and recurrent. 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 preparation of academic, research and health plan. The evaluation for skin disorders is important component of primary health care practices.⁹ The data about paediatric population in our country are scarce. Few studies done for the paediatric population of 73.22 million are insufficient to predict any prevalence of dermatoses. Moreover, environment has profound effect on prevalence of dermatoses.⁶ The changing environmental factors (e.g. pollution, urbanization) are associated with various cutaneous diseases (e.g. eczemas). Therefore, it is expected that frequency of paediatric dermatoses has changed over last few years. Most of the time, children are treated by paediatricians rather than dermatologists. The results of the present study will be helpful for both the paediatrician and dermatologists by knowing the most frequent pediatric dermatoses and help in taking steps in the management of patients.

Methods

A cross-sectional study was done at Department of Dermatology Unit I, at Allama Iqbal Medical College/Jinnah Hospital, Lahore. Nonprobability consecutive sampling was done. The duration of study was six months. Children up to 12 years of age belonging to both sexes suffering from skin diseases presenting in outpatient department were included. Children with life threatening and serious conditions e.g. chronic liver disease, renal failure, as well as, those taking drugs

(steroids, antituberculous, anticancer) were excluded from the study. After informed consent from parents of children, detailed history and physical examination were done for the presence of dermatoses including infection, infestation, eczema and diseases of sweat glands. All the information was collected on a pre-designed proforma. All the collected data were entered into SPSS version 10 and analysed.

Results

There were total of 350 patients in this study. The mean age of the patients in the study was 4.18 ± 2.97 years. The age distribution of patients is shown in **Table 1**. There were 186 (53.1%) male patients and 164 (46.9%) female patients (**Table 1**). Out of 350, there were 158 (45.1%) children who suffered from infection and 105 (30%) children had infestations. Eczema was present in 79 (22.6%) patients, disease of sweat gland in 8 (2.3%) patients. **Table 3** enlists the frequency of different pediatric dermatoses. In this study out of infection group 28 (17.7%) patients had bacterial infection, 53 (33.5%) had viral infection, and 77 (48.7%) patients suffered from fungal infection. Out of bacterial infections, 12 (42.9%) patients had folliculitis, 11 (39.3%) had impetigo and 5 (17.8%) patients had furunculosis. Among viral diseases, warts were seen in 28 (52.8%) patients followed by molluscum contagiosum in 11 (20.8%), chickenpox in 5 (9.4%), herpes simplex in 7 (13.2%) and measles in 2 (3.8%) patients. Out of patients suffering from fungal infections, 50 (64.9%) patients had tinea capitis, 19 (24.7%) patients tinea corporis and 8 (10.4%) patients tinea faciei. Among infestations, scabies was seen in 96 (91.4%) patients, while pediculosis capitis in 9 (8.6%) patients. Out of eczema group, seborrheic dermatitis was seen in 41 (51.9%) patients, contact dermatitis in 12 (15.2%) patients, pityriasis alba in 12 (15.2%)

Table 1 Demographic data of study population (n=350).

Characteristic	Frequency
Gender	
Male	186 (53.1)
Female	164 (46.9)
Age (year)	
≤1-4	160 (45.7)
5-8	114 (32.6)
9-12	76 (21.7)
Mean	4.18±2.97
Range	20-60

Table 2 Frequency of different dermatoses (n=350).

Characteristic	N (%)
Infections	158 (45.1)
Bacterial	28 (17.7)
Folliculitis	12 (42.9)
Impetigo	11 (39.3)
Furunculosis	5 (17.8)
Cellulitis	0
Viral	53 (33.5)
Warts	28 (52.8)
Molluscum contagiosum	11 (20.8)
Herpes simplex	7 (13.2)
Chicken pox	5 (9.4)
Measles	2 (3.8)
Herpes zoster	0 (0)
Dengue fever	0 (0)
Fungal	77 (48.7)
Tinea capitis	50 (64.9)
Tinea corporis	19 (24.7)
Tinea faciei	8 (10.4)
Pityriasis versicolor	0 (0)
Infestation	105 (30)
Scabies	96 (91.4)
Pediculosis capitis	9 (8.6)
Eczema	79 (22.6)
Seborrheic dermatitis	41 (51.9)
Pityriasis alba	12 (15.2)
Contact dermatitis	12 (15.2)
Atopic dermatitis	8 (10.1)
Diaper dermatitis	6 (7.6)
Disease of sweet gland	8 (2.3)

patients, atopic dermatitis in 8 (10.1%) patients, and diaper dermatitis in 6 (7.6%) patients.

Discussion

The pattern of skin diseases in 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 socio-economic factors.³ This study was conducted in a tertiary care unit of Pakistan, with a large sample of 350 patients.

The mean age of the patients in our study was 4.18±2.97 years. The majority of the patients (45.7%) were of age group <1-4 years followed by age group 5-8 years (32.6%). This high frequency of patients with dermatoses in age group 1-4 years has also been noticed by Thakare *et al.*¹⁰ who observed that 54.4% patient were of age group 1-4 years. However, in a large trial done by Balai *et al.*³ 46,321 patients were examined and only 2.16% patients were children up to five years of age. So, there is a variation of age groups in different studies.

There was a slight male dominance in our study i.e. 53.1% male patients. In the study by Thakare *et al.*¹⁰ 57.2% were males and 42.8 % were females. Javed *et al.*¹¹ also noted male dominance, 65% males and 35% females. So male dominance is observed in these studies.

The most common dermatosis in our study was infection (45.1%) followed by infestation (30%) and then eczema (22.6%). When these results were compared to study by Thakare *et al.*¹⁰ out of 710 patients infection (229) and infestation (100) were seen in 329 (46.33%) patients. Similar observations were made in other studies. Balai *et al.*³ observed that infection and infestation were seen in 417 (40.60%) followed by eczematous (358, 34.86%) and hypersensitivity (10.22%) groups. Mostafa *et al.*¹² again recorded high frequency of infections and infestations. Out of 1860 patients, 949 (51.02%) had infections and 388 (20.9%) had infestations. Javed *et al.*¹¹ conducted a study among 830 children, accounting for 27.2% of all dermatological patients. Scabies (21.7%) and atopic dermatitis (21.4%) were the most common dermatoses. The high frequency of

infection and infestation can be attributed to the fact that most of people belong to the rural community, low socioeconomic status, poor hygienic conditions and lack of education.

In our study, among infection group, fungal infection was the most common seen in 77 (48.7%) patients, followed by viral (53; 33.5%) and then bacterial (28; 17.7%) infection. However, Mostafa *et al.*¹² reported bacterial infection to be the most common entity, (436, 45.9%) followed by viral (304, 22.02%) and fungal infection (209, 32.03%). This is in accordance with study by Thakare *et al.*¹⁰ who observed that out of infections (229, 32.2%), bacterial infection was again the most common (109, 47.6%) followed by viral (80; 34.93%) and then fungal (40, 17.5%). In another study conducted by Javed *et al.*³ fungal infections were seen in 15.7% patients whereas bacterial infections constituted 8.2%. This variation in prevalence of dermatoses can be attributed to seasonal and climatic changes.³ Among fungal infections in our study (77, 48.7%), tinea capitis was the most common (50, 64.9%) followed by tinea corporis (19, 24.7%). Balai *et al.*³ also recorded tinea capitis in majority (47, 70.15%) of the cases followed by tinea faciei (7, 10.45%) and tinea corporis (7, 10.45%). Folliculitis (12, 42.9%) was the most common bacterial infection in our study followed by impetigo (11, 39.3%). However, impetigo was the most common bacterial infection seen in 410 (94%) patients study conducted by Mostafa *et al.*¹² Similar observation has been made in study conducted by Balai *et al.*³ impetigo was the commonest entity seen in 84 (59.57%) patients followed by secondary pyoderma (38, 26.39%). In a study conducted by Javed *et al.*¹¹ impetigo (58%), furunculosis (26%), folliculitis (9%) and ecthyma (7%) were the bacterial infections in descending frequency. Among the viral disorders, warts were the most common (28, 52.8%) followed by molluscum contagiosum

(11, 20.8%) and herpes simplex (7, 13.2%). In study by Balai *et al.*³, out of viral infections (35, 3.40%), again molluscum contagiosum (21, 60%) was the commonest viral infection followed by warts (7, 20%). The variation among infective dermatoses can possibly be attributed to region of study, prevalent environmental factors, type of population studied and hygienic and nutritional status.³

Out of infestation group, scabies was the most common infestation (96, 91.4%) followed by pediculosis capitis (9, 8.6%). In study by Balai *et al.*³ scabies was seen in 107 (10.42%) patients. In another study conducted by Mostafa *et al.*¹², out of total of 1860 cases, infestations were seen in 388 (20.9%) cases and among these pediculosis capitis was the most frequent (325, 83.8%) followed by scabies (63, 16.2%). Javed *et al.*¹¹ also observed scabies (180, 21.7%) to be the most frequent infestation. This high frequency of scabies can be attributed to sociocultural and environmental factors including overcrowding, poor sanitation, bad hygienic conditions, sharing of clothes and lack of education.

In our study seborrheic dermatitis was the most common (41, 51.2%) among the eczema group followed by contact dermatitis (12, 15.2%) and pityriasis alba (12, 15.2%) each. However, Balai *et al.*³ recorded atopic dermatitis to be the commonest (198, 55.31%) followed by seborrheic dermatitis (60, 16.76%) and pityriasis alba (29, 8.10%). Thakare *et al.*¹⁰ also found atopic dermatitis to be the most common (38, 28.7%) followed by seborrheic dermatitis (31, 23.8%). The high frequency of seborrheic dermatitis in our study can be due to reason that majority of the patients belonged to age group <1-4 years and infantile type seborrheic dermatitis is 3 times as likely in children <2 years old. Sardana *et al.*⁹ also found infantile seborrheic dermatitis to be more common

compared to pityriasis alba and atopic dermatitis. The incidence of eczema also depends upon environmental factors, season, genetic constitution and individual predisposition.³ Moreover, different degrees of exposure to external factors and different levels of functional development of skin may give rise to differential prevalence of dermatoses among infants, toddlers and children.¹⁴

In our study, miliaria was present in 8 (2.3%) cases. However, miliaria was present in a little higher proportion in study by Thakare *et al.*¹⁰ (35, 4.92%).

This study had some limitations. This was a single center study, with a limited population size. The population covered only tertiary care unit. The results of the study may be different for rural areas. The effect of seasonal variation on pediatric dermatoses could not be assessed properly.

Conclusion

Pediatric dermatoses are very common. Infection and infestations are the most frequent dermatoses. The most common group of dermatoses was infection whereas scabies was the most frequent dermatosis seen. However, there is need to conduct multicenter studies in order to determine the true incidence of dermatoses as there is variation in data from different studies.

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