
ORIGINAL ARTICLE**Study of Patterns of Dermatoses in Paediatric Attendees of a Tertiary Care Hospital at Pune**

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Abstract:

Background: Dermatological problems in pediatric population constitute at least one third of all outpatient visits to pediatricians and dermatologists, associated with significant morbidity. There is a relative paucity of data calculating the prevalence of pediatric dermatoses in developing countries like India with low socioeconomic factors, poor hygiene and malnutrition being the contributing factors. *Aim and Objectives:* To study the prevalence and pattern of dermatoses in pediatric attendees of our tertiary care hospital. *Material and Methods:* Nine hundred four pediatric patients aged 0-18 years attending the dermatology outpatient department and those from emergency referral of our tertiary care hospital were enrolled in this cross-sectional type of observational study carried over a period of two years. *Results:* Our study included 497 males and 407 females aged 0-18 years. Patients with non-infectious dermatoses: 555 (61%) and those with infectious dermatoses: 349 (39%). Fungal infections (156, 45%) were the most common finding in infectious dermatoses; atopic eczema (99, 17.84%) being the commonest in non-infectious dermatoses. *Conclusion:* Our study reflects the various patterns of dermatoses among paediatric patients. This information would further help in creating awareness about common dermatoses that are easily preventable by maintaining proper self-care and good personal hygiene.

Keywords: Paediatric Dermatoses, Dermatology Referral, Prevalence

Introduction:

Dermatological problems in pediatric population constitute at least 30% of all outpatient visits to paediatricians and dermatologists [1, 2]. The prevalence of skin diseases amongst children in various parts of India has ranged from 8.7% to 35% in school-based surveys [3]. About 68.8% of the skin conditions occurring in children can be physiological which include sebaceous hyperplasia, milia, Mongolian spot, cutis marmorata, harlequin colour changes, erythema toxicum neonatorum, pigmentary changes, hemangioma, etc. [4].

Pathological conditions constitute the rest 41.2% of the cases which include diaper dermatitis [Fig. 1], acrodermatitis enteropathica, phrynoderma, etc. [4]. Some of the pathological conditions can be treated while some can be prevented by observing personal hygiene and care. However, some of them are difficult to be treated. Relatively few studies calculating the prevalence of paediatric dermatoses have been carried out. Hence, this study aimed at determining the prevalence of pattern of dermatoses in paediatric patients presenting to the dermatology outpatient and emergency department of our tertiary care hospital within a two-year period.



Fig. 1: Diaper Dermatitis

Material and Methods:

After obtaining a written informed consent (Guardian's) and Institutional Ethics Committee (IEC) clearance, 904 pediatric patients aged 0-18 years attending the dermatology outpatient department and those from emergency referral were enrolled in this study conducted over a period of two years. The sample size required for the study was calculated by assuming the prevalence of fungal infection was 11.4%, with an acceptable difference of 2.28%, at a confidence level of 95%, the minimum sample size worked out to be 747. A total of 904 samples were taken into consideration.

Inclusion Criteria:

- 1) Age up to 18 years attending the Out Patient Department (OPD), inpatient department and those referred to dermatology from paediatric medicine emergency
- 2) Both male and female children
- 3) Parents willing to be part of study
- 4) Parents willing for necessary investigations on payments

Exclusion Criteria:

- 1) Age above 18 years
- 2) Any dermatoses where diagnosis is uncertain
- 3) Parents not willing to be part of study
- 4) Parents not willing for necessary investigation on payments

A detailed history was recorded with particular emphasis on the site of involvement, number of lesions, duration of lesions, treatment history, personal history, family history of similar lesions. Patients were categorized into groups namely bacterial, viral, fungal, parasitic, eczematous, papulosquamous, keratinisation, sweat and sebaceous gland, nutritional, hair and nail involvement, vascular malformation, hypersensitivity pigmentary dermatoses, connective tissue disorders, nevoid and developmental, miscellaneous. The mean and standard deviation were calculated for quantitative data. Analysis of Variance (ANOVA) test was applied for qualitative data.

Results:

Out of 904 patients enrolled in the present study, 498 (55%) patients were male, and 406 (45%) patients were female with 19.91% patients from less than two-year age group, 555 (61%) presented with non-infectious dermatoses and 349 (39%) with infectious dermatoses. Fungal infections were more prevalent in the infectious diseases category (Fig. 2) with pityriasis versicolor (14.61%) being the commonest followed by tinea incognito (10.60%) (Fig. 3). Ecthyma was the commonly encountered finding under bacterial infection followed by folliculitis. Scabies (29.51%) was the commonest under parasitic infection group. Under viral infections, molluscum contagiosum (6.30%) was the most common finding followed by viral exanthem (4.87%).

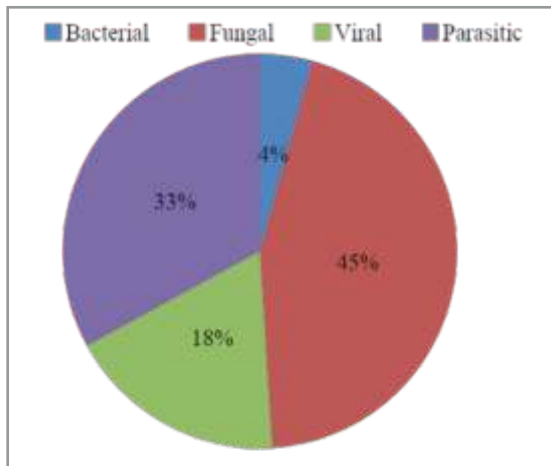


Fig.2: Pie Chart Showing Diagnosis in Infectious Dermatoses



Fig. 3: Tinea Incognito

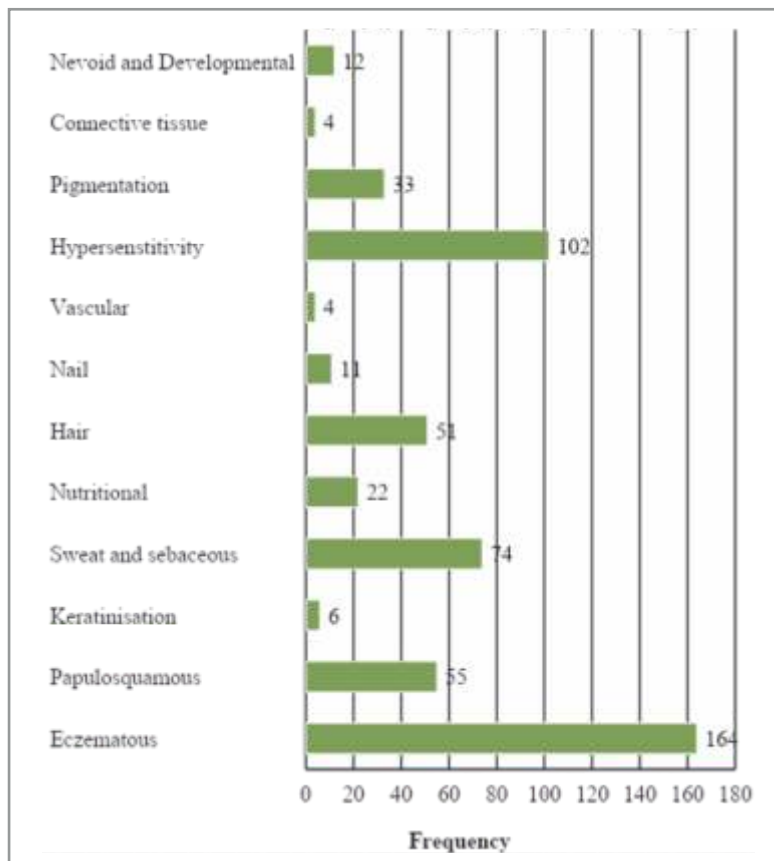


Fig. 4: Categorization of Non-infectious Dermatoses



Fig. 5: Papular Urticaria



Fig. 6: Vitiligo

The eczematous group of disorders predominated the non-infectious diseases category (Fig. 4) with atopic eczema (99, 17.84%) being the commonest. Phrynoderma (11, 1.98%) was the most common nutritional disease followed by angular cheilitis (9, 1.62%). Alopecia areata was the most common finding under the hair specific dermatoses whereas leuconychia was the commonest nail finding. Papularurticaria (Fig. 5) (34, 6.13%) followed by contact dermatitis (24, 4.32%) was the most common finding under hypersensitivity dermatoses. Under pigmentary dermatoses, vitiligo (Fig. 6) was the commonest finding (20, 3.6%) followed by melasma (9, 1.62%); Becker nevus (5, 0.9%) being the most common finding under nevoid and developmental disease. Keloid (7, 1.26%) was the most common under miscellaneous disease followed by xerosis (4, 0.72%). Pyogenic granuloma was the most common disorder under vascular malformation disorder; morphea being the commonest under connective tissue disease with four subjects present in each.

Discussion:

Low socioeconomic status, malnutrition, overcrowding, poor standards of hygiene are important factors accounting for the distribution of skin diseases in developing countries [5]. Balai *et al.* highlighted that status of health, hygiene and personal cleanliness of a society can be judged from the prevalence of certain skin diseases in the pediatric population [6]. In the present study, the non-infectious group of disorders were more frequently reported than the infectious group which was in accordance with the study conducted by Sacchidanand *et al.* [7]. Among the infectious group of disorders, fungal infections (156, 45%) were the commonest, followed by parasite infection (115, 33%) in contrast to the study conducted by Saini *et al.* in which viral infections (213, 21.3%) predominated. Climatic variations could result in differences among infectious dermatoses [8].

Ecthyma was the most frequently observed bacterial infection followed by folliculitis and



Fig. 7: Chronic Plaque Psoriasis

impetigo consistent with the findings of Javed *et al.* [9]. Out of the fungal infections, Pityriasis versicolor was most commonly seen in our study alike the findings of Reddy V [10]. Scabies was the predominant finding under parasitic infections which was similar to a study conducted by Balai *et al.* [6]. Molluscum contagiosum was the prominent finding, followed by viral exanthema under viral infections as in study by Kacar *et al.* [11]. Among the eczematous group of diseases, atopic eczema was most commonly seen followed by seborrheic dermatitis simulating the results of study conducted by Saini *et al.* [8]. Chronic plaque psoriasis (Fig. 7) was the prominent finding under the papulo-squamous group of diseases consistent with the findings of Mostafa *et al.* [12]. Under the keratinisation disorders, lamellar ichthyosis and keratosis pilaris were commonly seen with three cases of each. Acne vulgaris was the most

commonly reported glandular disorder. In the case of nutritional disorders, phrynoderma was the most commonly reported nutritional disorder as in study by Javed *et al.* [9].

Alopecia areata was the most frequent hair disorder followed by telogen effluvium, whereas leukonychia was the commonly observed nail disorder. In our study, papularurticaria was the most common finding under hypersensitivity disorder consistent with the report of Karthikeyan *et al.* [13].

Becker nevus was the most commonly seen nevoid disorder whereas pyogenic granuloma and morphea were the most common findings under vascular malformation disorder and connective tissue disease. Keloid was the most commonly seen under the miscellaneous diseases category. Our study was a cross-sectional type of observational study; prospective study designs are more likely to get a better understanding of the pattern of dermatoses and why a particular type is more prevalent in concerned cases.

Conclusion:

In the present study male preponderance was seen with maximum samples belonging from less than two-year age group. Redness was the most common presenting complaint which was followed by itching. On examination, it was seen that the trunk was the most common site of lesion and scalp was the least common site. In our study, 61% children had non-infectious dermatoses while the remaining 39% had infectious dermatoses. Fungal infections were predominant in the infectious group followed by parasitic infections. Ecthyma was the commonly seen bacterial infection and molluscum contagiosum was predominant in the viral infections group. Acne vulgaris was the most

common diagnosis seen under sweat and sebaceous gland disorders. In our study, we evaluated the pattern of various dermatoses in paediatric attendees at our tertiary care hospital. A further profound knowledge about paediatric dermatoses will help us in implementing essential changes in

the concerned areas of health education and disease control.

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