

Pattern of Pediatric Dermatoses at a Referral Centre

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Abstract

Objective To determine the pattern of skin disorders seen among children attending a Medical College Hospital, Bangalore

Methods All children 18 y and below attending the Pediatric Dermatology OPD with skin diseases between the period of January 2011 and June 2011 were included in the study.

Results A total of 1,090 new cases (boys 589; girls 501) with 1,118 dermatoses were recorded during this period. Twenty eight children had more than one dermatoses. Most of the disorders were seen between 5 and 11 y age group. The most common dermatoses was infections and infestations (32.47 %) followed by eczematous eruptions and dermatitis (20.66 %), papulosquamous and related disorders (6.08 %) and pigmentary disorders (5.81 %). Insect bite reactions and papular urticaria formed 5.1 %. Acne was seen in 5.28 % of children followed by urticaria (3.67 %), photodermatoses 2.5 % and genetic disorders (3.04 %).

Conclusions In the present setting bacterial infections and scabies still remained the most common pediatric dermatoses followed by molluscum contagiosum and atopic dermatitis. Childhood psoriasis contributed to major part of the study among papulosquamous disorders.

Keywords Pediatric dermatology · Dermatoses · Pattern · Skin diseases

Introduction

Children are not merely 'small adults'. Their presentation and spectrum of diseases are unique [1]. Pediatric dermatology deals with diseases and skin care requirements in individuals from birth to adolescence, a relatively short period in lifetime when significant physiological, psychological and maturity changes takes place [1]. Children with skin diseases are attended by pediatricians and dermatologists worldwide. Dermatological problems constitute at least 30 % of all outpatient visits to a pediatrician and 30 % of all visits to a dermatologist involve children [2]. The incidence of cutaneous disorders in children has been reported to be 9 to 37 % in various studies [3].

The pattern of skin diseases is known to differ in different countries of the world and in different regions of the same country. The literature is scanty on pattern of skin diseases in children in this part of the globe. Therefore present study was undertaken to identify the pattern of common dermatoses in this important age group.

Materials and Methods

The study was conducted at Department of Dermatology, STD and Leprosy, Victoria Hospital, a referral centre in South India. All children 18 y and below attending the Pediatric Dermatology outpatient department with cutaneous manifestations between the period of January 2011 and June 2011 were included in the study. A detailed history was taken; thorough clinical examination was done and was supported by investigations wherever necessary. The diseases were tabulated based on the etiology and results were analysed.

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Table 1 Demographic profile of study patients

Age	Boys(%)	Girls (%)	Total (%)
Neonates (Birth to 28 d)	4(0.37)	7(0.64)	11 (1.01)
Infants (1 mo to 1 y)	52(4.77)	46(4.22)	98(8.99)
Toddlers (1 y to 3 y)	102(9.35)	63(5.77)	165(15.13)
Preschool (3 to 5y)	79(7.24)	50(4.58)	129(11.8)
School age (5 to 11 y)	182 (16.69)	180(16.51)	362(33.21)
Adolescents (11 y to 18 y)	170(15.59)	155(14.22)	325(29.81)

Results

During the study period of 6 mo, 11,034 new cases attended the Dermatology outpatient department. A total of 1,090 children with 1,118 dermatoses were seen during this period, thus comprising 9.8 % of total new cases. Among these children 28 had more than one dermatoses. There were 589 (54.03 %) boys and 501 (45.96 %) girls with boys to girls ratio of 1.2:1. The demographic profile of the children is given in (Table 1).

The various dermatoses seen in pediatric age group are shown in Tables 2 and 3.

The total number of infective dermatoses was 363 (32.47 %) and non infective dermatoses were 755 (67.53 %). The infections and infestations formed the majority of the dermatoses. The pattern of various infections and infestations is shown in Table 2.

The various other disorders found in the study were Xerosis (21), Keratoses pilaris (7), Miliaria (8), Mucocele (6), Granuloma annulare (6), Collagen vascular disorders (3), Milia (5), Vasculitis (3), Keloid (4), Hypertrophic scars (3), Pityrosporum folliculitis (5), Pityriasis capitis (3), Infantile hemangioma (2)(Fig. 1), Lymphangioma circumscriptum (2), Congenital lymphedema (2), Vesiculobullous disorders (Epidermolysis

bullosa-1, Dermatitis herpetiformis-1), Cutis marmorata (2), Geographic tongue (2), Hereditary sensory motar neuropathy (2), Hyperhidrosis (2), Fissure feet (2), Lichen spinulosus (1), Acanthosis nigricans (1), Corns (1), Callus (1), Scleroderma (1), Lichen amyloidosis (2), Solitary mastocytoma (1), Mutilating Rhinopathy (1), Parapsoriasis (1), Pyogenic granuloma (1)and Striae Distensae (1).

Discussion

The pattern of skin diseases in any geographic area are affected directly or indirectly by climate, external environment, dietary habits and socioeconomic status [4].

In the present study the most common dermatoses observed were infections (Figs. 2 and 3)and infestations comprising about 32.47 % which is quite similar to that reported by Sayal et al. [3]. Various other studies have reported them occurring in the range of 35.6 % to 85.2 % [5–8]. Among infections and infestations bacterial infections, scabies and molluscum contagiosum accounted for majority of cases that is 7.51 %, 6.97 % and 5.46 % respectively. Periocular molluscum contagiosum was seen in many cases (Fig. 4). The high incidence could possibly be due to poverty, overcrowding, under nutrition, poor hygiene and lack of health education. Hot and humid climate of this region could have favoured breeding of infections and also school going children are exposed to variety of infections and contagions.

Eczemas constituted of about 20.66 % in the present study which is almost similar to the results of study done by Sardana et al. [9]. Studies from developed countries report incidence ranging from 3.1 % to 28 % [10]. Atopic dermatitis was the commonest eczematous dermatoses seen in the present study documenting an incidence of 6.12 % of total patients

Table 2 Distribution of infective dermatoses according to age and sex

Infective dermatoses	Age group												Total	%
	Neonates		Infants		Toddlers		Pre-school		School age		Adolescents			
	M	F	M	F	M	F	M	F	M	F	M	F		
Bacterial infection	0	2	7	6	12	7	5	4	14	12	12	3	84	7.51
Fungal infection	0	0	0	1	4	3	8	4	27	5	11	9	72	6.44
Viral infection	0	1	3	0	15	10	12	8	30	26	9	10	124	11.09
Scabies	0	0	1	1	13	6	8	5	14	11	14	5	78	6.97
Pediculosis	0	0	0	0	0	1	1	0	0	2	0	1	5	0.45
Total	0	3	11	8	44	27	34	21	85	56	46	28	363	32.47

Table 3 Distribution of non-infective dermatoses according to age and sex

Non infective dermatoses	Age group												Total	%
	Neonates		Infants		Toddlers		Pre-school		School age		Adolescents			
	M	F	M	F	M	F	M	F	M	F	M	F		
Eczema	0	0	16	15	30	18	16	11	39	35	30	21	231	20.66
Papulosquamous disorders	0	0	0	0	1	4	1	0	15	20	12	15	68	6.08
Pigmentary disorders	0	0	11	5	2	4	6	0	6	19	10	2	65	5.81
Acne	0	0	0	0	0	0	0	0	0	0	26	33	59	5.28
Insect bite reaction	0	0	5	3	10	9	8	2	5	3	1	11	57	5.10
Urticaria	0	0	0	2	2	1	3	2	6	13	8	4	41	3.67
Genetic disorders	3	0	1	1	2	5	4	3	2	4	6	3	34	3.04
Disorders of hair and nails	0	0	1	0	2	0	2	2	3	6	8	6	30	2.68
Photodermatoses	0	0	0	0	0	0	0	0	6	8	9	5	28	2.50
Nevi	0	2	1	1	0	1	0	2	0	2	4	1	14	1.25
Nutritional dermatoses	0	0	0	2	0	2	0	0	2	1	1	0	8	0.72
Pityriasis Rosea	0	0	0	0	0	0	0	0	0	2	4	2	8	0.72
Drug Reactions	0	0	0	0	0	1	0	0	1	1	2	3	8	0.72
Others	1	2	6	9	10	0	5	7	12	20	11	21	104	9.30
Total	4	4	41	38	59	45	45	29	97	134	132	127	755	67.53

(Fig. 5). Atopic dermatitis being a chronic condition presents with periods of remission which is also altered by the climatic condition of this region. Altered life style, dietary habits of children and exposure to many allergens in early age could explain the high incidence of disease. Around 4.2 % children had pityriasis alba, well known childhood low grade eczema.

Among the papulosquamous disorders, childhood psoriasis was the most common dermatoses and constituted about 4.28 % of the total dermatoses. Chronic plaque psoriasis was the most frequently observed

clinical pattern. Childhood psoriasis is a well recognized entity, but only limited epidemiological data are available. In one study psoriasis comprised 1.4 % of all pediatric dermatoses seen in patients less than 14 y of age [11, 12]. In a prospective study from Kuwait psoriasis was seen in 4 % [13]. The high incidence in the present study could be explained on the genetic basis of the disease and its occurrence before the age of 20 y in 20–35 % of all psoriasis patients [12].

Pigmentary disorders had a frequency of 5.81 %, among which vitiligo was the commonest disorder

**Fig. 1** Infantile hemangioma involving the lower lip**Fig. 2** Multiple warts present on the periocular area



Fig. 3 Tinea capitis: diffuse scaling with minimal erythema and patchy alopecia

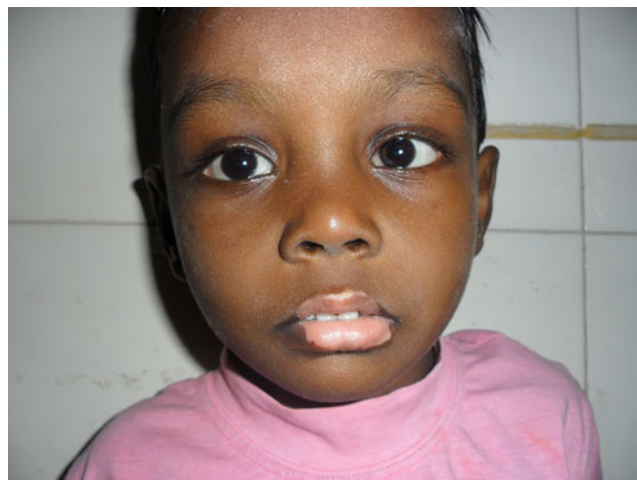


Fig. 6 Lip vitiligo: depigmentation of the lip



Fig. 4 Molluscum contagiosum: multiple umbilicated papules on face and chest



Fig. 7 Insect bite reaction: diffuse erythema with papulovesicles present on chest



Fig. 5 Infantile atopic dermatitis involving the cheeks



Fig. 8 Urticaria: multiple wheals on face



Fig. 9 Alopecia areata: well defined circumscribed patch of hair loss

(Fig. 6). Vitiligo constituted 3.89 % of the total dermatoses which is consistent with the study conducted by Javed et al. [14]. Earlier age onset of vitiligo has well been documented in various studies.

Insect bite reaction (Fig. 7) and papular urticaria contributed 5.1 % of the study population. Karthikeyan et al., observed these dermatosis as 5.27 % in their study [11]. Overcrowding and lack of hygiene favours breeding of mosquitoes and scanty clothing in children explains the increased incidence. Urticaria (3.67 %) had a major share of these dermatological cases (Fig. 8). Epidemiology of childhood urticaria is not fully known. Some studies have reported an incidence of 2.5 % [11, 15].

Acne (5.28 %) being one of the common problem in adolescence showed increased incidence in the present study compared to previous studies [5]. The age limit in the present study was 18 y, that explains the increased incidence.

Genetic disorders (3.04 %) such as congenital ichthyosis, collodion baby, Netherton syndrome were frequently seen in the present study in contrast to other studies [8–10]. In one study genetic disorders were observed in 2.1 % of all pediatric dermatoses [11]. Increased incidence of consanguineous marriage is high in India which helps in inheritance of uncommon autosomal recessive disorders.

Photodermatoses and diseases of hair and nails had a frequency of 2.5 % and 2.68 %. The study being conducted from January to June, a tropical climate, children are more exposed to sunlight during this time and their clothing pattern also favors high incidence of light induced dermatoses. Alopecia areata (1.36 %) was the commonest hair abnormality seen in the present study (Fig. 9).

The present study recorded 0.72 % of nutritional dermatoses which is very less as compared to other studies which reported incidence of 15.4 % to 17.5 % [5, 7]. Some studies have shown incidence from 0.45 % to 2.8 % [9, 11]. Nutritional deficiency being systemic illness prompted them to attend pediatric outpatient clinics.

The present study recorded rare diseases like Neurofibromatosis, Tuberous sclerosis, Netherton syndrome, Ectodermal dysplasia, Congenital atrichia, Bullous systemic lupus erythematosus as this institution has got a large catchment area and also gets referred patients from the pediatricians as well as general practitioners.

The present study brings into focus that burden of skin diseases among children less than 18 y is still infective in origin. It also highlights that non infective dermatoses form a large bulk and the so called rare diseases are not the rarest. Many of the dermatoses can be prevented by proper education, counseling and appropriate timely treatment. Viewing pediatric skin diseases in a developmental frame work improves both the physician-patient-parent relationship and compliance rates.

Conflict of Interest None.

Role of Funding Source None.

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