

## Pattern of pediatric dermatoses in Kashmir valley: A study from a tertiary care center

Sir,

Skin diseases in the pediatric population are common all over the world with the reported incidence varying between 9% and 37%.<sup>[1]</sup> This cross-sectional study was conducted to document the types of skin disorders prevalent among Kashmiri children aged upto 16 years. We enrolled 1079 consecutive children attending the dermatology, STD and leprosy outpatient department of SMHS Hospital (672 children) and the pediatrics outpatient department at GB Pant Hospital (associated teaching hospitals of Government Medical College, Srinagar) (407 children) from December 2012 to July 2013. The patients were grouped as infants (day 1-1 year old), preschool children (2-5 years old), school children (6-10 years old), and adolescents (11-16 years old). A detailed general, systemic, and cutaneous examination was done. Relevant investigations were carried out wherever necessary.

Of the total 1079 patients examined, preschool children comprised 35.5%, followed by infants (33.2%), school children (19%), and adolescents (12.3%). The male:female ratio was 1.4: 1. Out of the 407 children attending the pediatrics outpatient department, one hundred and twenty eight patients had no cutaneous findings. A total of 76 dermatoses were recorded and divided into 16 groups [Table 1]. Considering the individual dermatoses, the top ten were Mongolian spot (10.2%), papular urticaria (8.9%), tinea capitis (6.9%), pityriasis alba (5.2%), Molluscum contagiosum (4.2%) [Figure 1], scabies (3.9%), seborrheic eczema (3.9%) [Figure 2], impetigo (3.7%), varicella (2.5%), and hemangiomas (1.9%). Among infections, viral infections were the most common, followed by fungal, bacterial, parasitic, and mycobacterial [Tables 2-4]. Mycobacterial infections consisted of one case each of lupus vulgaris [Figure 3] and scrofuloderma. There was no case of leprosy. The most common type of eczema was pityriasis alba [Table 5]. Pigmentary disorders were seen in 14.1% cases, with Mongolian spot being the

most common (71.9%) [Figure 4]. Among other pigmentary disorders, vitiligo accounted for 42% of cases, followed by nevus anemicus, ephelids, lichen striatus, and melasma. In the hypersensitivity disorder, papular urticaria, which constituted 8.9% of all dermatoses, was predominantly seen in preschool children. Acne constituted 3.2% of all disorders group. Keratinization disorders included cases of lamellar ichthyosis, non-bullous ichthyosiform erythroderma, diffuse palmoplantar keratoderms [Figure 5a and b].

**Table 1: Frequency of pediatric dermatoses**

Diagnosis	Frequency (%)
Infections	317 (29.4)
Pigmentary disorders	153 (14.1)
Eczemas	129 (12)
No cutaneous finding	128 (11.9)
Hypersensitivity disorders	102 (9.45)
Miscellaneous disorders	83 (7.7)
Acne	34 (3.2)
Keratinization disorders	24 (3.2)
Vascular malformations	21 (2.0)
Papulosquamous disorders	19 (1.8)
Hair disorders	19 (1.8)
Nevoid disorders	12 (1.1)
Sweat gland disorders	11 (1.0)
Neurocutaneous disorders	7 (0.7)
Photodermatoses	6 (0.5)
Blistering disorders (epidermolysis bullosa)	5 (0.46)
Metabolic and nutritional disorders	4 (0.4)
Drug reactions	4 (0.4)
Total	1079 (100)



**Figure 1: Giant genital Molluscum contagiosum seen in a 15-year-old boy**

Papulosquamous disorders accounted for 1.8% of all cases and included psoriasis, lichen planus, and pityriasis rosea. Among the hair disorders, alopecia areata (52.6%) was the most predominant followed by

telogen effluvium (21%), canities (15.8%), androgenetic alopecia (5.3%), and monilithrix (5.3%). Sweat gland disorders included miliaria and hyperhidrosis.

**Table 2: Types of viral infections in different age groups**

Infections	Infants	Preschool children	School children	Adolescents	Total
Molluscum contagiosum	3	20	17	5	45
Varicella zoster	0	8	12	7	27
Verruca	0	2	6	9	15
Viral exanthem	3	4	2	0	9
Herpetic gingivostomatitis	0	10	0	0	10
Herpes simplex and zoster	0	1	2	3	6
Total	6	45	37	24	112

**Table 3: Types of fungal infections in different age groups**

Infections	Infants	Preschool children	School children	Adolescents	Total
Tinea capitis	6	29	26	14	75
Tinea corporis	1	3	3	8	15
Pityriasis versicolor	1	1	0	4	6
Candidiasis	3	1	0	0	4
Total	11	34	29	26	100

**Table 4: Types of bacterial infections in different age groups**

Infections	Infants	Preschool children	School children	Adolescents	Total
Impetigo	7	13	17	3	40
Folliculitis	1	3	1	6	11
Furunculosis	0	2	1	4	7
Abscess	0	0	1	1	2
Total	8	18	20	14	60

**Table 5: Types of eczemas in different age groups**

Eczema	Infants	Preschool children	School children	Adolescents	Total	%
Pityriasis alba	4	25	20	7	56	43.4
Seborrheic eczema	32	10	0	0	42	32.5
Atopic eczema	2	9	10	0	21	16.3
ACD	2	0	1	0	3	2.3
ICD	1	1	0	0	2	1.6
Infected eczema	0	1	1	0	2	1.6
Others	1	0	0	2	3	2.3
Total	42	46	32	9	129	

ACD: Allergic contact dermatitis, ICD: Irritant contact dermatitis



**Figure 2: Extensive seborrheic eczema in an infant**



**Figure 3: A case of lupus vulgaris**

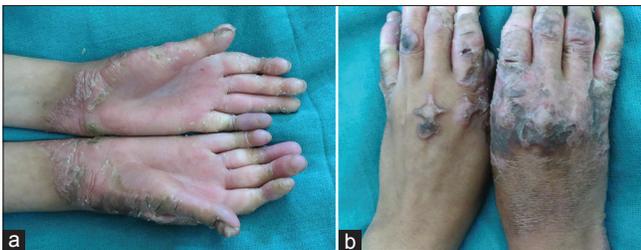


**Figure 4: A giant Mongolian spot in a 3-year-old boy. Port wine stains can also be seen on mid back and left buttock**

Neurocutaneous disorders encompassed Sturge Weber Syndrome, seen in two preschool boys, a single case of neurofibromatosis type 1 in a preschool boy and four cases of tuberous sclerosis in school children and adolescents. Among photodermatoses, polymorphic light eruption was the most common. A case of Kindler's syndrome in a 3-year-old girl was also documented. Five cases of epidermolysis bullosa were documented [Figure 6a-c]. Nutritional and metabolic disorders such as acrodermatitis enteropathica [Figure 7] and congenital erythropoietic porphyria comprised 0.4% of all the disorders. Miscellaneous disorders constituted 7.7% of all cases and included acanthosis nigricans [Figure 8], infantile hemangiomas [Figure 9], milia, Epstein pearls, lanugo hairs, toxic erythema of the new born, aphthous ulcers, physiological changes of the new born like desquamation, steroid rosacea, keloids, lipoma, morphea, collodion baby with polydactyly, congenital geographic tongue, and hemosiderosis.

In our study, most dermatoses were due to infections and infestations followed by pigmentary disorders and eczemas. A similar pattern of dermatoses has

been reported in several other studies where eczemas have followed infections.<sup>[1-3]</sup> However, in a few studies, eczema group has been the predominant dermatoses.<sup>[4]</sup> Unlike our study, some studies have reported bacterial infections to be the predominant group.<sup>[1,2,5,6]</sup> Sayal *et al.*<sup>[3]</sup> reported fungal infections to be more common. These differences among infective dermatoses can possibly be attributed to the regional climatic variations with cold and low humidity prevailing in Kashmir. The high prevalence of pigmentary disorders predominantly accounted by Mongolian spots (71.9%) has not been reported by many. Further genetic and epidemiological studies are awaited to explain its frequent occurrence. In our study, the eczema group accounted for 12% of all dermatoses and was most common in the preschool age children. In another study conducted in North India, eczemas were noted in only 5.2% of school children.<sup>[6]</sup> This indicates that eczema is commoner in Kashmir; this higher prevalence may be linked to genetic factors. The prevalence of nevoid disorders in



**Figure 5: (a) Vohwinkel palmoplantar keratoderma with pseudoainnum formation in a 13-year-old girl. The patient had hearing loss as well (b) Typical star fish keratoses seen in the patient**



**Figure 6: (a) Dystrophic epidermolysis bullosa in a 7-year-old child (b) Premature loss of teeth in the child (c) Complete loss of nails**



**Figure 7: A case of acrodermatitis enteropathica**



**Figure 8: Acanthosis nigricans in a 13-year-old girl who was suffering from Rothmund Thomson Syndrome**



**Figure 9: Infantile hemangioma on the abdomen**

our study was 1.1%. Earlier studies on the prevalence of pediatric dermatoses from Kashmir valley, that have not enrolled infants and preschool children, have reported this figure to be 0.4%.<sup>[7]</sup> The higher prevalence could be due to inclusion of children aged less than 6 years in our study. The lower proportion of acne which constituted 3.2% of all the cases is probably due our study being limited to the age group below 16 years. Seasonal and dietary variations could also account for this difference. Genetic disorders such as ichthyosis were frequently encountered in our study. The higher occurrence of these keratinization disorders in our population can be explained by the fact that our institute is a referral center. Moreover, the incidence of consanguineous marriage is high among the Muslim population of our region and may explain the higher prevalence of genodermatoses.

We conclude that skin disorders are common in children in the Kashmir valley with infections forming the largest group, followed by pigmentary disorders and eczemas.

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