

A Clinico- Epidemiological Spectrum of Paediatric Dermatoses in a Tertiary Care Hospital.

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ABSTRACT:

Paediatric dermatological conditions are a major health concern and are associated with substantial morbidity¹. 30% of outpatient dermatology consultations with paediatricians involve dermatological disorders, and 30% of dermatology consultations are conducted on children^{2, 3}. In a developing country like India people of low socioeconomic status are unaware of proper skincare. Malnutrition, overcrowding, and unhygienic practices further contribute to the burden of skin diseases. This was an analytical observational study carried out in a hospital setting at a tertiary facility by recruiting 250 children with skin diseases in the age group of 0-15 years. All these children were grouped according to their age. The present study noted male preponderance and a higher number of patients were in the age group of 6-15 years (69.6%). The most common group of dermatoses in our study was Infection and Infestation constituting 42% followed by, Papulosquamous disorders(12.4). This study helps in assessing the clinical pattern of various dermatoses. As there were only a few studies on pediatric dermatoses in our region, our study helps in assessing the pattern of dermatoses in this region and also in assessing the burden on the community.

Keywords: Infections, Burden, papulosquamous, pediatric dermatoses.

INTRODUCTION:

The skin is considered the largest organ of the human body, which makes it prone to numerous diseases.⁴ The skin of children is immature compared to that of adult skin and requires special care. Various syndromes, congenital and genetic skin disorders have their initial presentation in childhood.⁵ The majority of infantile or neonatal dermatoses are transient and physiological. School-going children are more susceptible to communicable diseases. The increase in residential institutions has also increased the prevalence of communicable diseases manifold in the last 2 to 3 decades, which in turn causes a social burden.

MATERIAL AND METHODS:

This was a tertiary hospital-based analytical, observational study intended to recruit all the patients of the pediatric age group. The study was undertaken for 18 months. parental or legal guardian consent was obtained. A sample of 250 children under 15 years of age with skin diseases was recruited for the study. All these children were grouped according to their age as Neonate (< 1 month), post-neonatal Infancy (1 month-year), Toddler (1-3years), preschool (3-6years), and school-age (6-15years). Patients who opted out of the trial were not included. Thorough clinical history and meticulous physical examination were done followed by relevant investigations. A structured questionnaire was used to document the findings and the data was analysed using SPSS version 20.

RESULTS:

Out of 250 children enrolled, the total number of boys was 133(53.2%) and girls 117(46.8%) with a male-to-female ratio of 1.13:1.

Table 1: Age and sex-wise distribution

Sex	Age distribution					Total	Percent
	<1 month	1month-1year	1-3 years	3-6 years	6-15 years		
Male	7	7	6	15	98	133	53.2%
Female	4	5	10	22	76	117	46.8%
Total	11	12	16	37	174	250	
Percentage	4.4%	4.8%	6.4%	14.8%	69.6%		100%

The most common group of dermatoses in our study was Infection and Infestation constituting 42% followed by, Papulosquamous disorder (12.4%), Inflammatory dermatoses (10.8%), Disorders of skin appendages (9.2%), Metabolic and nutritional dermatoses (4.8%), Pigmentary dermatoses (4.4%), Epidermal and dermal nevi (4%), Autoimmune Disorder (4%), Vascular and Lymphatic disorders (2.8%) and other miscellaneous dermatoses (5.6%).

Table 2: Distribution of various groups of Dermatoses

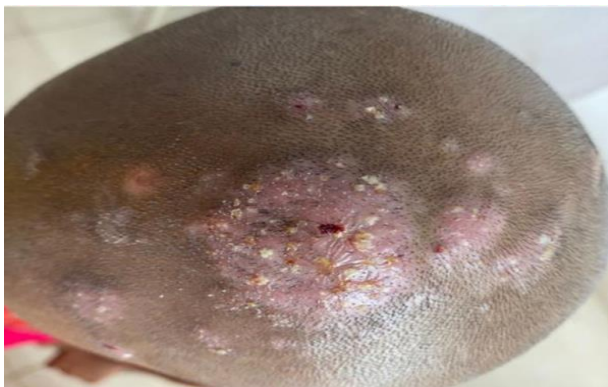
Group of dermatoses	Age					Total	Percentage
	> 1 Month	1 Month - 1 Year	1 - 3 Years	3 - 6 Years	6 - 15 Years		
Infection and Infestation	1	7	10	18	69	105	42%
Papulosquamous disorder	0	0	1	2	28	31	12.4%
Inflammatory dermatoses	0	2	3	6	16	27	10.8%
Disorders of skin appendages	6		0	3	14	23	9.2%
Metabolic and nutritional dermatoses	0	0	0	1	11	12	4.8%
Pigmentary dermatoses	0	0	0	3	8	11	4.4%
Epidermal and dermal nevi	3	1	0	0	6	10	4%
Autoimmune Disorder	0	1	0	2	7	10	4%
Vascular and Lymphatic disorders	0	1	1	0	5	7	2.8%

Miscellaneous	1	0	1	2	10	14	5.6%
Total	11	12	16	37	174	250	100%

The most common dermatosis in the Infection and Infestation category was parasitic infestation constituting 41 patients (16.4 %), among which the most frequent is the parasitic infestation by scabies.

Table 3: Distribution of infection and infestations

INFECTION & INFESTATION	N	%
Bacterial infections	15	6%
Viral infections	9	3.6%
Fungal infections	40	16%
Parasitic infestations	41	16.4%
Total	105	42%



TINEA CAPITIS

Note the erythematous plaque with pus and alopecia



Impetigo

Note the erosions with honey colored

In our study 31 patients (12.4%) were having papulosquamous disorders among which psoriasis is the most common, seen in 12 patients (4.8%).

Table 4: Distribution of papulosquamous disorders

Papulosquamous disorder	N	%
Psoriasis	12	4.8%
Lichen planus	8	3.2%
Lichen nitidus	6	2.4%
Lichen striatus	3	1.2%
Pityriasis Rosea	2	0.8%
Total	31	12.4%

Among the study population, 27 Patients (10.8%) are having inflammatory dermatoses. Of these 14 patients (5.6%) have Urticaria, and 8 patients (3.2%) have papular urticaria. In our study 23 patients (9.2%) had appendageal disorders. Acne vulgaris is common among this group, seen in 11 patients (4.4%). Out of the total study population, 12(4.8%) patients have Metabolic and Nutritional dermatoses. Of these 9 patients (3.6%) have Acanthosis Nigricans and 3 patients (1.2%) have phrynoderma.



ACNE VULGARIS

Note a Few Papules over the forehead and face.



ACANTHOSIS NIGRICANS

Note the Velely thickening of the skin on the anterior neck

Vitiligo is the most common pigmentary dermatosis seen in 9 patients (3.6%) out of 11 patients with pigmentary dermatoses. In 10 patients with autoimmune disorders, alopecia areata is seen in 8 patients (3.2%). Epidermal and dermal nevi are seen in 10 patients (4%). Vascular and lymphatic disorders are seen in 7 patients (2.8%), of which Pyogenic granuloma was seen in 3 patients (1.2%).



Linear and whorled nevoid hypermelanosis

Note the whorled pattern of brownish pigmentation on trunk



Linear verrucous epidermal Nevus

Linear verrucous growth over the neck in a Male patient.



LYMPHANGIOMA CIRCUMSCRIPTUM



FAUN TAIL NEVUS

In our study 14(5.6%) cases were included in the miscellaneous dermatoses category. These include urticaria pigmentosa 2(0.8%), Pityriasis alba 2(0.8%), granulomatous cheilitis 1(0.4%), keloid 1(0.4%), Trichotillomania 1(0.4%), Neurofibromatosis type 1, Xeroderma Pigmentosa 1(0.4%), Ichthyosis Vulgaris 1(0.4%), Traumatic Purpura 1(0.4%), Erythema Toxicum Neonatorum 1(0.4%), DI George syndrome 1(0.4%), Faun tail Nevus 1(0.4%).

DISCUSSION:

Skin disease will have a psychological impact and anxiety on children as well as their parents. These skin diseases will also have a negative impact on the development of the child. The studies on childhood dermatoses help in developing health education and awareness. In the study population, males outnumbered females. A similar pattern of male preponderance is observed in a study done by Krishnendra Varma et al.⁶ In the present study, most of the dermatoses were seen in children of school age (174, 69.6%). In a similar study done by Sugat A Jawade⁷, the preschool age group is the largest affected, and in a study by Sardana K et al,⁸ most of the dermatoses were seen in the pre-school-going age group. This disparity between the studies could be explained based on the fact that school-going children in our region are usually kept in residential institutions, as both the parents are busy with their jobs in their respective nuclear families. In the present study infections and infestations (42%) are predominantly noted which is similar to a study by Karthikeyan et al.⁹ Of the various studies conducted in different parts of India, the incidence of infections and infestations is found to be high ranging from 63.5%-85.2%.^{10, 11, 12, 13} This high incidence could be due to poor quality of water consumed, local food habits, and low literacy rate among the local population. It has been reported in studies by Negi,¹⁰ Sharma,¹¹ and Bhatia¹² that scabies, a parasitic infestation is one of the most common among the category infections and infestations, which is in agreement with our results. In our study population, the incidence of pediculosis

capitis is 2%, which is higher than the other studies done by Sugat A Jawade⁷ i.e., 0.45%, and 0.5% in a study done by Rao et al.¹⁴ This could be again because the resident students share combs, beds and can not afford the time to shower with shampoo. Bacterial infections constituted about 14.28% of total infections and infestations and contribute to 6% of the total dermatoses, which is similar to the study by Reddy VS et al.¹⁵ In our study Impetigo (4.4%) is the most frequent followed by folliculitis (0.8%), Furuncle (0.4%), and neonatal staphylococcal pustulosis (0.4%) whereas in the study by Reddy VS et al¹⁵ furunculosis was most common followed by Impetigo. Among the fungal infections, dermatophytoses (tinea) were most common(10.4%) followed by pityriasis Versicolor. Viral infections constituted 3.6% of the total dermatoses, which is in accordance with the observations by Balai et al(3.4%).¹⁶ Among these viral infections, viral warts (1.2%) were most common, followed by Molluscum contagiosum (0.8%), similar to the findings in the study by Patel et al.¹⁷ The second most frequent category of dermatoses in our analysis was papulosquamous disorders (12.4%). This is considerably higher than that in the study by Sugat A Jawade(9.1%).⁷ Among the papulosquamous disorders Psoriasis (4.8%) is the most common followed by Lichen planus(3.2%), similar to the study by Sugat A Jawade(2.58%).⁷ The incidence of Pityriasis Rosea in the present study is 0.8% whereas, it was 2% in a study done by Reddy VS et al,¹⁵ with a study population of 500 done in the year 2016; this variation could be due to seasonal differences in the study periods. Out of 250 children in the present study, 27(10.8%) children had

other inflammatory dermatoses, Of this urticaria (5.6%) is higher when compared to the study by Sugat A Jawade. ⁷ The next common other inflammatory dermatoses was Papular urticaria (3.2%) which is similar to the study by Gosh et al(4%).

9.2% of study participants had disorders of the skin appendages commonest being acne vulgaris which accounted for 4.4% followed by miliaria(2%) which are in accordance with Study by Reddy VS et al. ¹⁵ The frequency of lichen spinulosus is 1.2% in our study which is higher than the observation by Reddy VS et al. ¹⁵ In Metabolic and nutritional, acanthosis nigricans constituted 3.6% followed by phrynoderma (1.2%). The incidence of phrynoderma was higher in a study by Awate et al(9.8%). ¹⁸ In this study, the incidence of pigmentary dermatoses is 4.4% which is in accordance with the study by Thappa ² (3.16%). In the same study, nevoid and developmental disorders comprise 1.4% which is lesser compared to the present study. Mongolian spot 4(1.6 %,) and nevus spilus 3(1.2%) are common in our study, while in the study by Reddy VS et al ¹⁵ congenital melanocytic nevus came out to be the commonest.

CONCLUSION:

In the present study, infections and infestations outnumbered other dermatoses. This shows the need for the development of new health strategies in controlling the transmission of infectious diseases in our region. Our observations point out the need for the development of preventive strategies and also the need for conducting pediatric dermatology health camps in our region.

REFERENCES:

1. Medasani V, Oudeacoumar P, Chitralkhya R, Misra SK. Prevalence of pediatric dermatoses among patients attending Dermatology outpatient department in a tertiary care hospital in Puducherry. *Int J Res Dermatol* 2018;4:368-75.
2. Thappa DM. Common skin problems in children. *In J Pediatr* 2002;69:701-06.
3. Federman DG, Reid MC, Feldman SR, Greenhoe J, Kirsner RS. The primary care provider and the care of skin disease. *Arch Dermatol* 2001;137:25-9.
4. Swann G. The skin is the body's largest organ. *Journal of visual communication in medicine*. 2010 Dec;33(4):148.
5. Survey of clinical pediatrics. 6th ed. London: McGraw Hill Kogakusha Ltd; 1974. Wasserman Edward And Slobody Lawrence.
6. Varma K, Kumar U, Khairwar P K, A clinico-epidemiological study of pediatric dermatoses in a tertiary care center, Ujjain. *IP Indian J Clin Exp Dermatol* 2017;3(4):158-162.
7. Jawade SA, Chugh VS, Gohil SK, Mistry AS, Umrigar DD. A clinico-etiological study of dermatoses in pediatric age group in tertiary health care center in South Gujarat region. *Indian J Dermatol* 2015;60:635.
8. Sardana K, Mahajan S, Sarkar R, Mendiratta V, Bhushan P, Koranne RV, Garg VK. The spectrum of skin disease among Indian children. *Pediatr Dermatol*. 2009 Jan-Feb;26(1):6-13.
9. Karthikeyan K, Thappa DM, Jeevankumar B. Pattern of pediatric dermatoses in a referral center in South India. *Indian Pediatr* 2004;41:373.
10. Negi KS, Kandpal SD, Prasad D. Pattern of skin diseases in children in Garhwal region of Uttar Pradesh. *Indian Pediatr*. 2001;38:77-80.
11. Sharma RC, Mendiratta RC. Clinical profile of cutaneous infections and infestations in pediatric age group. *Indian J Dermatol*. 1999;44:174-178.
12. Bhatia V. Extent and pattern of pediatric dermatoses in central India. *Indian J Dermatol Venereol Leprol*. 1997;63:22-25.
13. Ghosh SK, Saha DK, Roy AK. A clinico aetiological study of dermatoses in pediatric age group. *Indian J Dermatol*. 1995;40:29-31.
14. Rao GS, Kumar SS, Sandhya. Pattern of skin diseases in an Indian village. *Indian J Med Sci* 2003;57:108-10.
15. Reddy VS, Anoop T, Ajayakumar S, Bindurani S, Rajiv S, Bifi J. Study of clinical spectrum of pediatric dermatoses in patients attending a Tertiary Care Center in North Kerala. *Indian J Paediatr Dermatol* 2016;17:267-72.
16. Balai M, Khare AK, Gupta LK, Mittal A, Kuldeep CM. A pattern of pediatric dermatoses in a tertiary care center of South West Rajasthan. *Indian J Dermatol*. 2012 Jul; 57(4):275-8.
17. Patel JK, Vyas AP, Berman B, Vierra M. Incidence of childhood dermatoses in India. *Skin med*. 2010;8:136-42.