

Research Article



INTERNATIONAL RESEARCH JOURNAL OF PHARMACY

www.irjponline.com

ISSN 2230-8407 [LINKING]

ASSESSING THE PATTERNS OF PEDIATRIC DERMATOSES IN THE CHILDREN VISITED TO TERTIARY HEALTH CARE CENTER AT GULBARGA CITY

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How to cite: Hatti SS, Patil GR, Sarvi JB, Bhosgi RS. Assessing the patterns of pediatric dermatoses in the children visited to tertiary health care center at Gulbarga City. International Research Journal of Pharmacy. 2024; 15:3: 21-25.

Doi: 10.56802/2230-8407.1304304

ABSTRACT

Background: In nearly 30% of all the children visiting the Pediatrician, dermatological problems are being reported or noticed with higher prevalence in subjects from rural areas. However, existing literature data is scarce for exclusively assessing the dermatological concerns in Pediatric subjects in the Indian scenario.

Aim: The present study aimed to assess the patterns of common dermatoses in child subjects in Indian tertiary health care centers.

Methods: The present study assessed 1100 child subjects from both genders reporting to the Pediatric Department of the institute and comprising 498 males and 552 female subjects with a total of 1072 dermatoses being recorded. The data gathered was statistically analyzed for results formulation.

Results: The most common dermatoses was infections and infestations with 54.66% (n=586) dermatoses followed by dermatitis and eczema in 8.58% (n=92) subjects, pigmentary disorders in 5.69% (n=61) subjects, insect bite reactions in 5.31% (n=57), hair and nail disorders in 5.22% (n=56), malaria in 4.10% (n=44), nutritional deficiency disorders in 2.89% (n=31), urticaria in 2.51% (n=27), genetic disorders in 2.14% (n=23), psoriasis in 1.39% (n=15)

Conclusions: The present study concludes that a higher number of dermatoses like infestations and infections are seen in child subjects along with nutritional disorders and environmental disorders such as malaria and bite reactions. Also, child subjects have rare and genetic dermatoses. The majority of these dermatoses can be controlled by improving the environment, nutrition, and proper sanitation.

Keywords: Children, dermatoses, pediatrics, dermatological conditions, Indian healthcare center

INTRODUCTION

Dermatoses in child subjects are reported in nearly 30% of all the dermatological consultations that are being done and reported. In the Indian context, infectious diseases are more common in other developing countries compared to

Western countries where eczema is more prevalent. Dermatoses in child subjects result in significant psychological and physical morbidity owing to them being visible. Also, early assessment of cutaneous conditions in children can help in the diagnosis of latent systemic and genetic disorders.¹

Concerning the Indian scenario, the prevalence of skin disorders in child subjects ranges from 9% to 35% in different geographical areas as confirmed in the school-based surveys. A relatively higher prevalence of skin diseases is being seen in the Indian child subjects belonging to rural areas compared to the subjects in urban areas. Previous literature data also showed that all the subjects from the schools of high-altitude tribal areas of Himachal Pradesh are reported to have one or more skin disease types.²

Skin diseases in pediatric subjects can be transitory or chronic and recurrent. Chronic dermatoses are linked to significant psychological impact and morbidity in child subjects. Dermatoses in pediatric subjects need a separate assessment from the dermatoses in adult subjects owing to vital differences in the prognosis, treatment, and clinical presentation.³ In child subjects, dermatoses are highly affected by the external environment, dietary habits, climatic exposure, and socioeconomic status. Cutaneous infections are commonly seen in child subjects of school-going age. The majority of the cutaneous diseases that result from intrinsic genetic abnormalities also are seen in the subjects from the pediatric age group.^{4,5}

Evaluation of skin health is a vital aspect of primary health care as it is an indirect indicator of the dietary habits, health status, and personal hygiene practices of the child and their families. Also, socioeconomic status is a vital marker of the nutritional and health status of the family. Skin health also affects the affordability and accessibility of health care and basic hygiene. Hence, skin disorders are closely associated with the socioeconomic status of the parents. Recent literature data reported that skin disorders in child subjects increase the burden on the healthcare system in India.⁶ Hence, the present study aimed to assess the patterns of common dermatoses in child subjects in Indian tertiary health care centers.

MATERIALS AND METHODS

The present cross-sectional clinical study aimed to assess the patterns of common dermatoses in child subjects in Indian tertiary health care centers. The study was done at Department of Pediatrics, Gulbarga Institute of Medical Sciences Gulbarga, Karnataka. Verbal and written informed consent was taken from all the parents of the subjects before study participation.

The study included child subjects visiting the Outpatient Department of Pediatrics of the Institute, with any dermatoses from both genders, in the age range of <14 years, and where the parents gave consent for participation of their children. The exclusion criteria for the study were child subjects with any syndrome associated with dermatological conditions, subjects having systemic diseases, subjects with critical illness, subjects requiring admission to ICU (intensive care unit), and subjects whose parents were not willing to participate in the study.

After the final inclusion of the study subjects, a detailed history was recorded concerning the dermatoses in all the study subjects followed by a comprehensive clinical examination. The diagnoses of the dermatoses were made by the dermatologist based on the history of the subjects, clinical features, and adequate investigations including the KOH examination, skin biopsy, VDRL test, skiagrams, biochemical investigations, hematological investigations, Gram-stained smear, Tzanck test. Depending on the etiology of the disease, dermatoses were segregated.

The data gathered were analyzed statistically using the SPSS software version 21.0 (IBM Corp., Armonk, NY, USA) and the chi-square test. The data were expressed as mean and standard deviation and frequency and percentage. Statistical significance was kept at a p-value of <0.05.

RESULTS

The present cross-sectional clinical study aimed to assess the patterns of common dermatoses in child subjects in Indian tertiary health care centers. Within the study duration, a total of 5200 subjects visited the Outpatient Department of Pediatrics of the Institute where a total of 1100 subjects were seen with dermatoses and the total number of dermatoses in the study subjects was 1072 depicting 20.02% new cases during the study duration. Among 1100 subjects assessed, more than one dermatosis was seen in 88 study subjects.

Among 110 child subjects assessed, there were 498 male and 552 female subjects. Based on the age range, there were 19.72% (n=217) subjects in the age range of 0-1 years with 9.63% (n=106) males and 10.09% (n=111) females. In 1-4 years, there were 36.90% (n=406) subjects with 18.72% (n=206) males and 18.18% (n=200) females. At 5-9 years of age, there were 27.45% (n=302) subjects with 12.36% (n=136) males and 15.09% (n=166) females. In 10-14 of age, there were 11.36% (n=125) subjects with 4.54% (n=50) males and 6.81% (n=75) females. There were a total of 45.27% (n=498) males and 50.18% (n=552) females as shown in Table 1.

The study results showed that for the etiological distribution of various dermatoses in child study subjects, the most common dermatoses were infections and infestations with 54.66% (n=586) dermatoses followed by dermatitis and eczema in 8.58% (n=92) subjects, pigmentary disorders in 5.69% (n=61) subjects, insect bite reactions in 5.31% (n=57), hair and nail disorders in 5.22% (n=56), malaria in 4.10% (n=44), nutritional deficiency disorders in 2.89% (n=31), urticaria in 2.51% (n=27), genetic disorders in 2.14% (n=23), psoriasis in 1.39% (n=15), collagen vascular disorders and hemangiomas in 0.5%% (n=6), drug eruptions in 0.27% (n=3), pityriasis rosea in 0.18% (n=2), and other skin dermatoses in 5.875 (n=63) study subjects respectively making a total of 1072 dermatoses as summarized in Table 2.

Concerning the pattern of infestations and infections in the study subjects, for viral infections, exanthems, varicella zoster, herpes simplex, warts, and molluscum contagiosum were seen in 4.47% (n=48), 0.27% (n=3), 0.37% (n=4), 0.46% (n=5), 0.74% (n=8), and 2.61% (n=28) study subjects respectively. In Fungal infections, subcutaneous phycomycosis, candidiasis, tinea versicolor, and tinea corporis were 0.09% (n=1), 2.14% (n=23), 3.17% (n=34), and 3.07% (n=33) in number respectively as depicted in Table 3. In the pattern of infections and infestations, in the study subjects, total dermatoses were 1072 in number whereas, in infestations, the dermatoses of cutaneous lava migrans, pediculosis, and scabies was 0.09 (n=1), 2.42% (n=26), and 14.17% (n=152) in number respectively with a total of 179 infestations. Total pyoderma were 268 in number with 0.09% (n=1) blistering dactylitis, 1.67% (n=18) bullous impetigo, 5.69% (n=61) impetigo contagiosa, and 17.53% (n=188) secondary pyoderma respectively (Table 3).

DISCUSSION

Within the study duration of the present study, a total of 5200 subjects visited the Outpatient Department of Pediatrics of the Institute where a total of 1100 subjects were seen with dermatoses and the total number of dermatoses in the study subjects was 1072 depicting 20.02% new cases during study duration. Among 1100 subjects assessed, more than one dermatosis was seen in 88 study subjects. These data were similar to the studies of Foley P et al⁷ in 2001 and Federman DG et al⁸ in 2001 where the study design similar to the present study was adopted by the authors in their studies.

It was seen that among 110 child subjects assessed, there were 498 male and 552 female subjects. Based on the age range, there were 19.72% (n=217) subjects in the age range of 0-1 years with 9.63% (n=106) males and 10.09% (n=111) females. In 1-4 years, there were 36.90% (n=406) subjects with 18.72% (n=206) males and 18.18% (n=200) females. At 5-9 years of age, there were 27.45% (n=302) subjects with 12.36% (n=136) males and 15.09% (n=166) females. In 10-14 of age, there were 11.36% (n=125) subjects with 4.54% (n=50) males and 6.81% (n=75) females. There were a total of 45.27% (n=498) males and 50.18% (n=552) females. These results were comparable to the previous studies of Wenk C et al⁹ in 2003 and Hon KL et al¹⁰ in 2004 where the authors assessed subjects with demographic data comparable to the present study.

It was seen that for the etiological distribution of various dermatoses in child study subjects, the most common dermatoses were infections and infestations with 54.66% (n=586) dermatoses followed by dermatitis and eczema in 8.58% (n=92) subjects, pigmentary disorders in 5.69% (n=61) subjects, insect bite reactions in 5.31% (n=57), hair and nail disorders in 5.22% (n=56), malaria in 4.10% (n=44), nutritional deficiency disorders in 2.89% (n=31), urticaria in 2.51% (n=27), genetic disorders in 2.14% (n=23), psoriasis in 1.39% (n=15), collagen vascular disorders and hemangiomas in 0.5%% (n=6), drug eruptions in 0.27% (n=3), pityriasis rosea in 0.18% (n=2), and other skin dermatoses in 5.875 (n=63) study subjects respectively making a total of 1072 dermatoses. These results were consistent with the findings of Dhar S et al¹¹ in 1998 and Sardana K et al¹² in 2009 where the most common dermatoses reported by authors were infections and infestations as seen in the results of the present study.

The study results showed that concerning the pattern of infestations and infections in the study subjects, viral infections, exanthems, varicella zoster, herpes simplex, warts, and molluscum contagiosum was seen in 4.47% (n=48), 0.27% (n=3), 0.37% (n=4), 0.46% (n=5), 0.74% (n=8), and 2.61% (n=28) study subjects respectively. In Fungal infections, subcutaneous phycomycosis, candidiasis, tinea versicolor, and tinea corporis were 0.09% (n=1), 2.14% (n=23), 3.17% (n=34), and 3.07% (n=33) in number respectively. These findings were in agreement with the results of Kartikheyan K et al¹³ in 2004 and Negi KS et al¹⁴ in 2001 where patterns of infections and infestations of dermatoses in Indian pediatric subjects were similar to the present study results/.

Concerning the pattern of infections and infestations, in the study subjects, total dermatoses were 1072 in number whereas, in infestations, the dermatoses of cutaneous lava migrans, pediculosis, and scabies were 0.09 (n=1), 2.42% (n=26), and 14.17% (n=152) in number respectively with a total of 179 infestations. Total pyoderma were 268 in number with 0.09% (n=1) blistering dactylitis, 1.67% (n=18) bullous impetigo, 5.69% (n=61) impetigo contagiosa, and 17.53% (n=188) secondary pyoderma respectively. These results were in line with Bonthu I et al¹⁵ in 2020 and Poudyal AY et al¹⁶ in 2016 where authors reported infestations and pyoderma similar to the present study in their study subjects.

CONCLUSIONS

Within its limitations, the present study concludes that a higher number of dermatoses like infestations and infections are seen in child subjects along with nutritional disorders and environmental disorders such as malaria and bite reactions. Also, child subjects have rare and genetic dermatoses. The majority of these dermatoses can be controlled by improving the environment, nutrition, and proper sanitation.

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TABLES

S. No	Age range (years)	Males (n=498)		Females (n=552)		Total (n=1100)	
		n	%	n	%	n	%
1.	0-1	106	9.63	111	10.09	217	19.72
2.	1-4	206	18.72	200	18.18	406	36.90
3.	5-9	136	12.36	166	15.09	302	27.45
4.	10-14	50	4.54	75	6.81	125	11.36
5.	total	498	45.27	552	50.18	1100	100

Table 1: Gender and age distribution in child study subjects

S. No	Dermatoses	Number (n)	Percentage (%)
1.	Pityriasis rosea	2	0.18
2.	Drug eruptions	3	0.27
3.	Hemangiomas	6	0.55
4.	Collagen vascular disorders	6	0.55
5.	Psoriasis	15	1.39
6.	Genetic disorders	23	2.14
7.	Urticaria	27	2.51
8.	Nutritional deficiency disorders	31	2.89
9.	Malaria	44	4.10
10.	Hair and nail disorders	56	5.22
11.	Insect bite reaction	57	5.31
12.	Pigmentary disorders	61	5.69
13.	Dermatitis and eczema	92	8.58
14.	Infections and infestation	586	54.66
15.	Others	63	5.87
16.	Total	1072	100

Table 2: Etiological distribution of various dermatoses in child study subjects

S. No	Dermatoses	Number (n=1072)	Percentage (%)
1.	Viral infections	48	4.47
a)	Exanthems	3	0.27
b)	Varicella Zoster	4	0.37
c)	Herpes simplex	5	0.46
d)	Warts	8	0.74
e)	Molluscum contagiosum	28	2.61
2.	Fungal infections	91	8.48
a)	Subcutaneous phycomycosis	1	0.09
b)	Candidiasis	23	2.14
c)	Tinea versicolor	34	3.17
d)	Tinea corporis	33	3.07
3.	Infestations	179	
a)	Cutaneous lava migrans	1	0.09
b)	Pediculosis	26	2.42
c)	Scabies	152	14.17
4.	Pyoderma	268	
a)	Blistering dactylitis	1	0.09
b)	Bullous impetigo	18	1.67
c)	Impetigo contagiosa	61	5.69
d)	Secondary pyoderma	188	17.53

Table 3: Pattern of infestations and infections in the study subjects