Section: DVL

Original Research Article

A COMPENDIUM OF PAEDIATRIC DERMATOSES WITH EMPHASIS ON SEASONAL SIGNIFICANCE IN A TERTIARY CARE CENTRE: A CROSS SECTIONAL STUDY

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Received *: 05/04/2025*
Received in revised form *: 23/05/2025*
Accepted *: 12/06/2025*

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DOI: 10.70034/ijmedph.2025.2.484

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2025; 15 (2); 2669-2674

ABSTRACT

Background: Dermatological conditions among paediatric population are unique in the essence of their clinical presentation, management and prognosis in comparison to the adult. The occurrence of the disease depends on the complex interplay between various factors such as age, genetic makeup, topography, socioeconomic status and climatic influences. The present study was aimed to determine the patterns of various dermatoses in paediatric population and to emphasize and analyse the effect of seasonal variation in paediatric dermatoses.

Materials and Methods: A prospective, cross-sectional study was conducted in tertiary care hospital, Kurnool among children aged between 0 and 12 years attending the DVL OPD over a period of one year from June 2023 to May 2024. A thorough history was obtained and detailed examination was done and recorded after obtaining informed consent from the parent or guardian. The data collected was tabulated and analysed according to the demographic profile and seasonal distribution.

Results: Out of 1046 patients, 59.5% of them were males and 40.5% were females. The highest percentage of patients according to age group was the school going children [48.75%] and with respect to the season majority of cases were seen during winter [41.30%]. The most common dermatoses in the present study was eczema [36.80%], followed by infections [23.04%] and infestations [13.28%].

Conclusion: This study reinforces that an inclusive approach towards education and awareness, concerning paediatric dermatoses is crucial as it helps in decreasing the burden of the same, by creating significant impact at both the personal and communal levels.

Keywords: Paediatric dermatoses; seasons; eczema; infections; infestations.

INTRODUCTION

Dermatological conditions among paediatric population are unique in the essence of the clinical presentation, management and prognosis in comparison to the adult and are associated with consequential morbidity. Among given skin diseases in the children, few of the them have acute and transient course requiring only a single or a few visits to the dermatologist, whereas others are chronic and recurrent, demanding more frequent and long term follow ups.[1]

The occurrence of the disease depends on the complex interplay between multiple factors such as age, genetic makeup, topography, socioeconomic status and climatic influences.[2] A child's developing physiology, immature immune system and specific exposure patterns makes them particularly vulnerable to adverse environmental changes.[3]

Kurnool, located in the north western part of Andhra Pradesh at 15.8333° north latitudes and 78.05° eastern longitudes, has tropical climate with 3 definite seasons including summer, monsoon and winter. The epidemiological data on paediatric dermatoses acts as an invaluable tool in the evaluation of the standards of child health care and also to establish and strengthen the community-based health strategies accordingly.

The current study was undertaken to find out the patterns of various dermatoses in paediatric age group to emphasize and analyse the effect of seasonal variation in paediatric dermatoses.

MATERIALS AND METHODS

Study Design: A cross sectional, observational study.

Study Area: Department of Dermatology, Venereology and Leprosy, Government General Hospital (GGH), Kurnool

Study Population: Children visiting DVL OPD between the age group of 0 to 12 years.

Study Period: June 2023 to May 2024.

Sampling Method: Simple random method.

Sample Size: 1046 patients.

Inclusion Criteria:

1. All the children whose parents or guardians were willing to provide informed consent to participate in the study.
2. All patients from birth to 12 years of age.
3. All patients presenting with cutaneous manifestations in established period irrespective of sex.

Exclusion Criteria:

1. Children above 12 years of age.
2. Non-cooperative patients.
3. Children whose parents or guardians were not willing to provide informed consent.
4. Patients whose primary lesions have been altered by application of topical medication.

Ethical Consideration: The study was initiated after getting approval from institutional ethics committee.

Data Collection Method

After acquiring informed consent from the parent or guardian, a detailed history was taken and thorough dermatological and systemic examination was done and recorded. When required patients were subjected to investigations like KOH mount, Gram staining, diascopy, Wood's lamp examination, Tzanck smear, culture and sensitivity and skin biopsy. The data collected was tabulated in the pre-designed proforma and analysed using MS Excel IBM SPSS 26 version in terms of demographic characteristics and distribution of various dermatoses according to the seasonal variations.

RESULTS

A total number of 1046 children aged between 0 and 12 years were included and evaluated in the present study.

According to the age group, the cases were stratified into 4 categories which includes infants [0 to 12 months], toddlers [1 to 3 years], pre-school [3 to 6 years] and school going children [6 to 12 years]. Among them, majority were in the range of school going age constituting 510 cases [48.75%], followed by 262 cases [25.04%] in the pre-school group. Toddlers and infants accounted for 18.73% [n= 196] and 7.45% [n=78] respectively.

Based on the sex distribution males were the most commonly affected group [n=622; 59.5%] compared to females [n= 424; 40.5%].

Table 1: Demographic profile of the study population

Age	Male	Female	Total	Percentage
0 to 12 months	40	38	78	7.45%
1 to 3 years	101	95	196	18.73%
3 to 6 years	158	104	262	25.04%
6 to 12 years	323	187	510	48.75%
Total	622	424	1046	100%

Table 2: Distribution of various infections and infestations observed in the study population

Disease group	Summer	Monsoon	Winter	Total	Percentage
Infections				241	23.04%
Bacterial				119	11.37%
Impetigo	71	6	4	81	7.74%
Folliculitis	5	4	4	13	1.24%
Furunculosis	7	1	2	10	0.95%
Hansens disease	0	1	0	1	0.09%
Staphylococcal scalded skin syndrome	0	0	1	1	0.09%
Periporitis	13	0	0	13	1.24%
Viral				59	5.64%
Viral exanthem	6	9	6	21	2.00%
Hand, foot and mouth disease	0	7	1	8	0.76%
Verruca vulgaris	3	3	0	6	0.57%
Herpes labialis	1	2	0	3	0.28%
Herpetic whitlow	0	0	1	1	0.09%
Varicella	1	2	7	10	0.95%
Herpes zoster	3	3	0	6	0.57%
Gianotti crosti syndrome	0	1	0	1	0.09%

Molluscum contagiosum	1	2	0	3	0.28%
Fungal				63	6.02%
Dermatophytosis	29	6	12	47	4.49%
Pityriasis versicolor	5	3	2	10	0.95%
Candidiasis	2	3	1	6	0.57%
Infestations				139	13.28%
Scabies	30	33	68	131	12.52%
Pediculosis	1	3	4	8	0.76%

Among the various infections, bacterial infections were most common and majority of them were observed during the summer [n=119;11.37%]. Impetigo was noted in highest percentage of the population [n=81;7.74%] among bacterial infections. Viral infections were noted in 59 cases [5.64%]. Viral exanthem was the most frequent among viral infections observed in 2% of the patients [n=21], followed by hand, foot and mouth disease in 0.76% of the cases [n=8]. Both of them were commonly seen during the monsoon.

Out of the fungal infections, dermatophytosis [n=47; 4.49%] was the commonest, followed by pityriasis versicolor [n=10;0.95%] and majority of the patients presented during the summer.

Scabies [n=131;12.52%] was the most frequently observed disease among infestations and highest number of the cases were noted during the winter.

Table 3: Distribution of non-infectious dermatoses observed in the study population

Disease group	Summer	Monsoon	Winter	Total	Percentage
Eczema				385	36.80%
Atopic dermatitis	10	28	100	138	13.19%
Pityriasis alba	20	15	20	55	5.25%
Seborrheic dermatitis	3	3	5	11	1.05%
Contact dermatitis	5	7	21	33	3.15%
Acute eczema	3	7	30	40	3.82%
Prurigo simplex	26	32	50	108	10.32%
Pigmentary disorders				33	3.15%
Vitiligo vulgaris	10	7	8	25	2.39%
Albinism	1	0	0	1	0.09%
Ashy dermatosis	1	1	0	2	0.19%
Mongolian spot	2	1	0	3	0.28%
Reticulate acropigmentation of Dohi	0	2	0	2	0.19%
Papulosquamous disorders				50	4.78%
Psoriasis vulgaris	1	5	7	13	1.24%
Lichen planus	2	2	2	6	0.57%
Lichen nitidus	3	2	5	10	0.95%
Lichen spinulosus	1	1	3	5	0.47%
Pityriasis rosea	3	1	2	6	0.57%
Pityriasis rubra pilaris	0	1	0	1	0.09%
Lichen striatus	2	2	3	7	0.66%
Pityriasis lichenoides et varioliformis acuta	1	1	0	2	0.19%
Appendageal disorders				65	6.21%
Miliaria	59	0	0	59	5.64%
Acne vulgaris	2	1	3	6	0.57%
Nevi				19	1.81%
Congenital melanocytic nevi	1	0	2	3	0.28%
Verrucous epidermal nevi	1	1	3	5	0.47%
Inflammatory linear verrucous epidermal nevi	1	0	1	2	0.19%
Nevus depigmentosus	3	2	3	8	0.76%
Nevus of ota	1	0	0	1	0.09%
Bullous disorders				7	0.66%
Epidermolysis bullosa simplex	1	1	3	5	0.47%
Epidermolysis bullosa dystrophica	1	0	1	2	0.19%
Keratinisation disorders				12	1.14%
Ichthyosis vulgaris	0	0	4	4	0.38%
Collodion baby	1	1	0	2	0.19%
Lamellar ichthyosis	0	1	1	2	0.19%
Bathing suit ichthyosis	0	1	0	1	0.09%
Erythrokeratoderma variabilis	0	0	1	1	0.09%
Palmoplantar keratoderma	0	1	1	2	0.19%
Nutritional deficiency disorders				20	1.91%
Phrynoderma	5	4	10	19	1.81%
Acrodermatitis enteropathica	0	1	0	1	0.09%
Drug reactions				2	0.19%
Stevens -Johnson syndrome	1	0	0	1	0.09%
Drug induced maculopapular rash	0	1	0	1	0.09%
Cysts and swellings				10	0.95%
Mucous retention cyst	0	1	1	2	0.19%
Hemangioma	0	2	4	6	0.57%

Pyogenic granuloma	1	1	0	2	0.19%
Genodermatoses				7	0.66%
Bloom syndrome	1	0	0	1	0.09%
Goldenhar syndrome	0	0	1	1	0.09%
Tuberous sclerosis complex	0	0	2	2	0.19%
Trichothiodystrophy	0	1	0	1	0.09%
Xeroderma pigmentosum	1	0	0	1	0.09%
Leopard syndrome	1	0	0	1	0.09%
Vascular disorders				3	0.28%
Purpura fulminans	1	1	0	2	0.19%
Henoch schonlein purpura	0	0	1	1	0.09%
Autoimmune disorders				12	1.14%
Systemic lupus erythematosus	2	0	0	2	0.19%
Alopecia areata	2	2	6	10	0.95%
Miscellaneous				41	3.91%
Urticaria	10	5	12	27	2.58%
Vulvovaginitis	3	1	3	7	0.66%
Polymorphic light eruption	7	0	0	7	0.66%

Atopic dermatitis was the most common entity among the eczemas, primarily seen during the winter accounted for 13.19% [n=138] of the cases followed by prurigo simplex [n= 108;10.32%].

Pigmentary disorders constituted for 3.15% of the total cases [n=33] and vitiligo vulgaris was the commonest pigmentary disorder seen in 25 cases [2.39%].

Papulosquamous disorders accounted for 4.78% of the patients [n=50], among them psoriasis vulgaris was the most frequent one seen in 13 cases [1.24%] predominantly during the winter, followed by lichen nitidus [n=10; 0.95%] and lichen striatus [n=7;0.66%].

Among the appendageal disorders, miliaria was the commonest, seen distinctively during the summer in 59 cases [5.64%].

Ichthyosis vulgaris was seen in 0.38% of the cases [n=4], primarily during the winter among keratinisation disorders.

Among genodermatoses, each one case of bloom syndrome, xeroderma pigmentosum and leopard syndrome were observed during the summer [n=1;0.09%]. Others include trichothiodystrophy [n=1;0.09%], Goldenhar syndrome [n=1;0.09%] and tuberous sclerosis complex [n=2;0.19%].

Figure 1: Juvenile Plantar Dermatosis

Out of the autoimmune disorders [n=10;0.95%], systemic lupus erythematosus with cutaneous manifestations was noted in 0.19% of the patients [n=2] during the summer. Polymorphic light eruption was detected in 7 cases [0.66%] exclusively during the summer.

Figure 2: Impetigo

Figure 3: Herpes Labialis

Figure 4: Collodion Baby

DISCUSSION

Paediatric dermatoses constitute a significant proportion in the spectrum of the dermatological disorders. The pattern of the skin diseases in children has a wide range of variation which depends on a myriad of factors such as genetic factors, dietary habits, personal and environmental hygiene, socioeconomic factors and seasonal influences.[2]

GGH, Kurnool is the prime institution located in the north western part of AP serving the people of Rayalaseema in the state of AP, part of Telangana and Karnataka regions that shares the borders with AP. Kurnool has a typical tropical savanna climate with an average rainfall of 670 - 840 millimetres. The maximum and minimum temperatures during summer, winter and monsoon are 43°- 36°; 35° - 18°; 28° - 20° respectively. Approximately 70,000 patients attend DVL OPD of GGH, Kurnool per annum. As a result, it allows a comprehensive coverage of diseases ranging from common to complex ailments.

In the current study, majority of the cases were in the range of school going age accounting for 48.75% of the patients [n=510] and lowest number of patients were noted in the infantile group [n=78;7.45%]. In the studies conducted by Sacchidanand S et al,[3] Parth Shekhat et al,[4] and Bonthu I et al,[5] highest proportion of study population was in the school going age category which is in accordance with the current study.

Out of 1046 patients, 59.5% were males and 40.5% were females with a ratio of 1.46:1. The sex distribution of this study is in concordance to the studies conducted by Jawade et al,[6] and Pooja T U et al.[7]

According to the seasonal distribution, maximum number of cases were observed during the winter [n=432; 41.30%] followed by summer [n= 378; 36.13%] and monsoon [n=236; 22.56%]. However, in the studies done by Pooja T U et al,[7] and Kumar U et al,[8] most of the patients were seen during the monsoon [32.6%] and summer [32.4%] respectively. The most prevalent dermatoses noted in this study was the eczemas 36.80%, followed by infections [23.04%] and infestations [13.28%] which is in concordance with the study conducted by Tharakan et al.[9] It also aligns with the studies conducted on pattern of paediatric dermatoses worldwide.[1,10]

Atopic dermatitis was the most common dermatoses seen in the present study during winter in 9.56%[n=100] of the patients, emphasizing the cold climate as an environmental trigger in the pathogenesis of atopic dermatitis.[11,12] Similar pattern was reported by Tharakan et al,[9] in their study.

The second most common dermatoses during the winter was scabies [n=68; 6.5%], which is in line with the increased incidence of the disease during winter secondary to overcrowding and longevity of the mite in cooler temperatures.[13]

During summer, the most prevalent dermatoses in the present study was impetigo observed in 6.78%[n=71] of the patients, which is similar to the studies reported by Kumar U et al,[8] and Khalid A et al.[14] This can be justified by the fact of rapid growth and proliferation of the bacteria in hot and humid climate.[15] Miliaria [5.64%] and periporitis [1.24%] were seen exclusively during the summer. Genodermatoses including bloom syndrome [0.09%] and xeroderma pigmentosum [0.09%] were seen primarily during summer asserting the photosensitivity associated with these particular disorders. The same postulation justifies the presentation of cutaneous manifestations of systemic lupus erythematosus [0.19%] and polymorphic light eruption [0.66%] during the summer season.

CONCLUSION

The present study was undertaken to highlight the seasonal influences on the skin and its disorders among paediatric population, which revealed that the eczemas are the most prevalent dermatoses followed by infections and infestations. It is imperative to know about the pattern of these cutaneous disorders, its risk factors and preventive measures in order to reduce the substantial burden of the paediatric dermatoses. Apart from the treatment of the particular ailment, proper counselling and education about the same are pertinent, as it also poses a significant psychological impact that perturbs parents and/or caretakers.

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