

PREVALENCE OF PAEDIATRIC DERMATOSES IN THE AGE GROUP OF 5-14 YEARS AT A TERTIARY CARE CENTER IN SALEM

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ABSTRACT

BACKGROUND

Skin diseases in pediatric age group are common all over the world. Pediatric dermatoses require separate view from adult dermatoses as there are differences in their clinical presentation and treatment.

OBJECTIVE

The aim of our study was to determine the prevalence of pediatric dermatoses attending our tertiary care center.

MATERIALS AND METHODS

This was a cross-sectional study conducted in 100 consecutive children with dermatoses between 5-14 years of age attending dermatology outpatient department at Vinayaka Missions Kirupananda Variyar medical college, Salem. The study was conducted over a period of 6 months from February 2016 to August 2016. Demographic parameters, detailed history, clinical features and diagnosis were recorded and analyzed.

RESULTS

In our short term study, we examined 100 pediatric cases with 106 dermatoses. The incidence of infections and infestations (43.39%) was more prevalent in our study. The most common non-infectious dermatoses in our study was insect bite reactions (17.9%). Dermatitis and eczema (9.39%), disorders of sweat and sebaceous glands (6.6%), pigmentary disorders (5.66%), disorders of hair and nails (3.77%), genetic disorders (2.88%), immune and allergic disorders (2.8%), psoriasis (2.8%), nutritional disorders (0.9%), Polymorphic light eruption (0.9%), pearly penile papule (0.9%), aphthous ulcer (0.9%) and pityriasis rosea (0.9%) were the other dermatoses seen in the study.

CONCLUSION

Fungal infections (tinea versicolor and tinea corporis), scabies and insect bite reactions were the common dermatoses observed in our study. Most of the pediatric patients attending our hospital came from rural areas belonging to low socioeconomic strata. Health education, proper sanitation and improved nutrition will help to reduce the incidence of pediatric dermatoses.

KEYWORDS

Paediatric Dermatoses, Infections and Infestations, Tinea Versicolor, Insect Bite Reactions and Scabies.

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BACKGROUND

Skin diseases in pediatric age group are common all over the world. Dermatological problems constitute at least 30% of all outpatient visits to a pediatrician and 30% of all visits to a dermatologist involve children.¹ The prevalence of

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pediatric dermatoses in various parts of India has ranged from 8.7% to 35% in school-based surveys.^{1,2} Dermatoses in pediatric age include both congenital (genodermatoses) and acquired skin conditions.³ Skin lesions can be a sign of internal systemic diseases like systemic lupus erythematosus (SLE), rheumatoid arthritis, scleroderma, Cushing's syndrome, intestinal malabsorption syndromes, renal and hepatobiliary diseases.^{4,5} Pediatric dermatoses requires separate view from adult dermatoses as there are differences in their clinical presentations and treatment. It is also seen much more common in children of low socioeconomic status because of their poor personal hygiene, overcrowding and poor sanitation.

Skin diseases in pediatric age group can be transitory or chronic and recurrent. Some chronic skin diseases like

psoriasis in pediatric age can lead to stigmatization of that particular child which can have a significant psychological impact on that child. Early diagnosis, treatment and counseling is needed in such chronic cases. Occasionally, skin lesions can signify the nutritional status of children and climatic conditions of the region.^{6,7} Certain genetic disorders including ichthyosis and palmoplantar keratoderma are seen in children born to consanguineous couples. The principal aim of this study was to determine the prevalence of pediatric dermatoses in the age group 5-14 years attending our tertiary care center.

OBJECTIVES

This study was undertaken to determine the prevalence of pediatric dermatoses in the age group of 5 to 14 years attending a tertiary care center in Salem.

MATERIALS AND METHODS

This was a cross-sectional study conducted in 100 consecutive children with dermatoses between 5-14 years of age attending the Dermatology outpatient department at Vinayaka Missions Kirupananda Variyar medical college hospital, Salem. The study was conducted over a period of 6 months from February 2016 to August 2016. Each child was examined under bright sunlight for any skin lesions and changes in skin and its appendages. Demographic parameters like name, age and sex, presenting complaints, detailed history were recorded and then based on clinical features, diagnosis was made and appropriate investigations were done wherever necessary like KOH examination, Tzanck test, Grams staining, hematological and biochemical investigations, VDRL test, skin biopsy etc. The findings were recorded, analyzed and interpretation of data was done using SPSS version-12 software. Results were tabulated and expressed as percentages.

RESULTS

In our short-term study, we examined 100 pediatric cases with 106 dermatoses. Out of 100 pediatric cases, 68 were boys and 32 were girls. Pediatric patients in and around our hospital from the rural areas attended our tertiary care center. Boys were in significant proportion in our study with a male to female ratio of 2:1. In the age group of 5-9 years, we had 49 cases and in the age group of 10-14 years, we had 51 cases. The age and sex distribution of children is shown in Table 1.

The incidence of infections and infestations (43.39%) was more prevalent in our study. In our study, fungal infections (19.8%) were more prevalent than bacterial infections (4.71%) and viral infection (5.65%). Among fungal infections, tinea versicolor (15.09%) was seen commonly followed by tinea corporis (3.77%). Next to fungal infections, viral infections were common (5.65%). Among viral infections, molluscum contagiosum (2.83%) was common and we encountered cases of viral warts (1.88%) and viral exanthema (0.94%). Among bacterial infections, impetigo (3.77%) was common and we encountered a case of pyoderma. Parasitic infestations were

seen in 13.2% children and scabies (12.26%) was prevalent among infestations. The most common non-infectious dermatoses in our study was insect bite reactions (IBR) (17.9%). Dermatitis and eczema (9.39%), disorders of sweat and sebaceous glands (6.6%), pigmentary disorders (5.66%), disorders of hair and nails (3.77%), genetic disorders (2.88%), immune and allergic disorders (2.8%), psoriasis (2.8%), nutritional disorders (0.9%), PMLE (0.9%), pearly penile papule (0.9%), aphthous ulcer (0.9%) and pityriasis rosea (0.9%) were the other dermatoses seen in the study. Distribution of pediatric dermatoses is shown in Table 2. Pattern of infections and infestations is shown in Table 3.

| Age | Male | Female | Total |
|--------------|-----------------|-----------------|------------|
| 5-9 yrs. | 34 (69.4%) | 15(30.6%) | 49 |
| 10-14 yrs. | 34 (66.6%) | 17(33.3%) | 51 |
| Total | 68 (68%) | 32 (32%) | 100 |

Table 1. Age and Sex Distribution of Children

| Dermatoses | No. of Cases |
|---|-------------------|
| Infections and Infestations | 46 (43.39%) |
| Insect Bite Reactions (IBR) | 19 (17.9%) |
| Dermatitis and Eczema | 10 (9.43%) |
| Disorders of Sweat and Sebaceous glands | 7(6.6%) |
| Pigmentary Disorders | 6 (5.66%) |
| Disorders of Hair and Nails | 4(3.77%) |
| Genetic Disorders | 3 (2.8%) |
| Psoriasis | 3 (2.8%) |
| Immune and Allergic Disorders | 3 (2.8%) |
| Nutritional Disorders | 1 (0.9%) |
| Others | 4 (3.77%) |
| Total | 106 (100%) |

Table 2. Distribution of Paediatric Dermatoses

| Dermatoses | No. of Cases |
|-----------------------------|--------------|
| Fungal Infections | |
| Tinea Versicolor | 16 (15.09%) |
| Tinea Corporis | 4 (3.77%) |
| Tinea Pedis | 1 (0.94%) |
| Bacterial Infections | |
| Impetigo | 4 (3.77%) |
| Pyoderma | 1 (0.94%) |
| Viral Infections | |
| Molluscum Contagiosum | 3 (2.83%) |
| Verruca Vulgaris | 2 (1.88%) |
| Viral Exanthem | 1 (0.94%) |
| Infestations | |
| Scabies | 13 (12.26%) |
| Pediculosis | 1 (0.94%) |

Table 3. Pattern of Infections and Infestations



Figure 1. Insect Bite Reactions Stomach



Figure 2. Insect Bite Reaction



Figure 3. Lamellar Ichthyosis



Figure 4. Phrynoderma



Figure 5. Verruca Vulgaris

DISCUSSION

The pattern of skin diseases among children is varied due to some influencing factors like malnutrition, overcrowding, poor hygiene, genetic factors, climate, external environment, dietary habits and socioeconomic status.^{1,8}

Children in the age group of 5-14 years have the initial exposure to the environment and during this period they have high chances of contracting dermatoses. In our study, prevalence of dermatoses was predominant in boys (68%) compared to girls (32%). While previous studies done by Karthikeyan et al¹ and Reddy et al⁹ showed girls outnumbering the boys of about 52.6% and 51.4% respectively. Most common dermatoses encountered were infections and infestations (43.39%) as in many other studies with fungal infections (19.8%) predominating than bacterial (4.71%) and viral (5.65%) infections. Karthikeyan et al¹ in their study observed infections and infestations (54.5%) as the common dermatoses of which bacterial infections (25.74%) were common in their study. Reddy et al⁹ reported fungal infections (45.59%) were more common in their study and tinea corporis (53.12%) as significant among fungal infections, which is similar to our study. Among fungal infections, tinea versicolor (15.09%) and tinea corporis (3.77%) were common in our study. The high incidence of fungal infections especially tinea versicolor in our study can be substantiated by the tropical climate in our region. Tinea versicolor is seen commonly in hot and humid places than in temperate zones.¹⁰

The incidence of infections and infestations was seen in 30 (68.2%) boys and 14 (31.8%) girls. Thus, infections and infestations together were seen more in boys compared to girls. Regarding age group, the incidence is slightly higher in the age group of 10-14 years with 23 cases (52.3%) as against 21 cases (47.7%) in the age range of 5-9 years. Next to fungal infections, viral infections (5.65%) were common and among viral infections molluscum contagiosum was common (2.83%), followed by warts (1.88%).

Bacterial infections constituted 4.71% of the total dermatoses. Impetigo (3.77%) was common among bacterial infections and we encountered only one case of pyoderma. Karthikeyan et al¹ have shown bacterial infections as common among infections and infestations.

Scabies contributed majority of the infestations seen in our study (12.26%). Karthikeyan et al¹ (14.2%), Reddy et

al⁹ (3.6%) and Nageswaramma et al¹¹ (15.3%) had reported scabies as common among infestations. The incidence of scabies was high due to overcrowding and poor hygiene among rural people. The incidence of pediculosis capitis was 0.94%. The low incidence of pediculosis capitis shows increased hair-care and due to lower percentage of girls in our study as pediculosis commonly affects girls with longer hair. Short hairs of boys are less likely to be infested with lice.

The incidence of insect bite reactions (IBR) was 17.9% in our study. Karthikeyan et al¹ has reported IBR to be 5.27% and Bangaru et al¹² reported IBR as 4.36%. The increased incidence of IBR in our study may be due to rural people belonging to low-socioeconomic strata having increased exposure to insect bites. Moreover, the incidence of insect bite reactions is decreased with long-term re-exposure. This may be due to the hypo sensitization of the individuals to particular antigens.¹³

The incidence of eczemas and dermatitis was 9.43% of total dermatoses. Neupane et al.¹⁴ have shown eczemas to be 21.49%. The incidence of eczemas and dermatitis was low in our study (9.43%), which was consistent with Karthikeyan et al (8.6%).¹ Atopic dermatitis was seen in only one case (10%) among eczemas and dermatitis.

Pigmentary disorders constituted 5.66% of the total dermatoses. We encountered cases of post-inflammatory hyperpigmentation (0.9%), acanthosis nigricans (0.9%), vitiligo vulgaris (0.9%), segmental vitiligo (0.9%) and nevus achromicus (1.88%).

The disorders of sweat and sebaceous glands constitute 6.6% of the total dermatoses including cases of miliaria rubra (3.77%) and acne vulgaris (2.8%). The incidence of acne vulgaris was found to be common in adolescent age group.

The incidence of disorders of hairs and nails was 3.77%. Neupane et al¹⁴ reported hair and nail disorders to be 4.2% and Karthikeyan et al¹ reported as 5.2%.^{1,14} We encountered cases of folliculitis (2.8%) and alopecia areata (0.9%).

The incidence of genetic disorders was 2.8%. We had 2 cases of albinism and one case of lamellar ichthyosis. Albinism was reported from the same family. The child's parents who had lamellar ichthyosis gave history of consanguineous marriage. The incidence of consanguineous marriage also increases the risk of genetic disorder.

The incidence of psoriasis was 2.8% of all the dermatoses. We encountered psoriasis vulgaris and scalp psoriasis cases in our study. Karthikeyan et al¹ had shown the prevalence of psoriasis as 1.4%.

The incidence of immune and allergic disorders was 2.8%. We had cases of angioedema (1), lichen planus (1) and acute urticaria (1). The incidence of nutritional disorder was only 0.9% which included 1 case of phrynoderma. Though the incidence of nutritional disorder is reduced when compared to other dermatoses, it still poses problem.

The limitations in our study were short term study done over 6 months duration and sample size was much smaller compared to other studies due to which common pediatric dermatoses like varicella, leprosy, atopic eczema were not seen.

CONCLUSION

In our study we observed fungal infections (tinea versicolor and tinea corporis), scabies and insect bite reactions as the common dermatoses. Most of the pediatric patients attending our hospital came from rural areas belonging to low socioeconomic strata. Health education, proper sanitation and improved nutrition will help to reduce the incidence of common dermatoses. It is emphasized that community-based surveys over a longer time period should be carried out to determine the prevalence of dermatoses among the community and to provide health education. Chronic dermatoses and hair disorders like psoriasis vulgaris, lamellar ichthyosis and alopecia areata leads to stigmatization of the child which would have a psychological impact and these children need regular treatment and general counseling in the later part of life. This study helps to assess the changing trends of the pediatric dermatoses in our area.

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