

## Clinical study of paediatric dermatoses

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### **Abstract:**

**Background:** Pediatric dermatoses are distinct group of disorders, comprising of skin problems encountered during childhood and adolescence. There is variation in the pattern and presentation of dermatoses in childhood compared to adults

**Aim:** To ascertain the pattern of various dermatoses occurring in children aged below 12 years attending the Department of DVL, Government general hospital, Vijayawada, Andhra Pradesh. .

**Methodology:** This was a cross sectional, clinical observational study in pediatric patients attending DVL OPD of tertiary care centre Vijayawada between July 2013 – June 2014, were enrolled in the present study.

**Results:** Among 500 patients the most common age group is 4-6 yrs (39%) followed by 7-9 yrs (32%). Sex ratio in our study is 1.27:1(M: F). Common disease observed is infections 32%, followed by Infestations 21%, Eczemas 14%, hypersensitivity disorders 9%. Pigmentary disorders 4%, Sweat and sebaceous gland disorders 3.82%, Papulosquamous disorders 2.8%, Nutritional disorders 2.7%, Keratinization disorders 2.4%, Photodermatoses 2.3%, Nevi and Nevoid disorders 2%, Disorders of Hair and Nail 1.5%.

**Conclusion:** The present study brings out the unique features of Tropical pediatric dermatology. The incidence of pediatric dermatoses can be brought down by increasing awareness among the population regarding etiology and spread of pediatric diseases and by improving sanitation, nutrition and personal hygiene of children.

**Key words:** Infections in Childhood, Pediatric Dermatoses.

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### I. Introduction

Pediatric dermatoses are distinct group of disorders, comprising of skin problems encountered during childhood and adolescence<sup>1</sup>. Skin diseases in the pediatric population are common all over the world. There is variation in the pattern and presentation of dermatoses, with eczemas being the most common skin disorder in developed countries and infections and infestations in the developing countries. The incidence of pediatric dermatological conditions is on a gradual increase day by day. Dermatoses in children are more influenced by socioeconomic status, climatic exposure, dietary habits and external environment as compared to dermatoses in adults.

Dermatologic conditions constitute at least 30% of all outpatient visits to pediatricians, and 30% of all visits to dermatologists involve children<sup>2,3</sup>. The frequency of pediatric dermatoses in school based surveys in India has ranged from 8.7% to 35%<sup>4</sup>. Cutaneous infections are common in children during school going years due to the fact that they are exposed to subclinical infectious cases by intermingling with each other.

The aim of the present study is to determine the pattern of common dermatoses in children attending the Government General Hospital, Vijayawada, Andhra Pradesh. The present study brings into light the unique features of Tropical pediatric dermatoses.

### II. Aim

- 1.To ascertain the pattern of various dermatoses occurring in children aged below 12 years attended the Department of DVL, GGH Vijayawada.
- 2.To determine the possible factors that contribute to pediatric dermatoses.

### III. Patients & methods

Study was conducted on 500 children with dermatoses aged below 12 years attending the Dept.of D.V.L, Govt.General Hospital, Vijayawada.It was a hospital based cross sectional and clinical observational study conducted between July 2013 to June 2014. Informed valid written consent was taken from parents and clinical data was recorded as per the proforma. Detailed history taken and complete clinical examination was done. All these patients were subjected to routine investigations and special investigations were done whenever necessary.

#### IV. Observations & results

500 randomly selected children attending the DVL department Government general hospital, Vijayawada from 1.7.2013 to 30.6.2014 were studied and analyzed as follows.

##### 1. Sex distribution:

**Table No:1 (n=500)**

Out Patients	Number	Percentage
Male Children	280	56
Female Children	220	44
Total	500	100

In the present study, male children constituted about 56% (280) and female children constituted about 44% (220).

##### 2. Age distribution:

**Table No: 2 (n=500)**

Age Of Children	No. Of Children	Percentage
Birth To 3 Years	110	22
4 To 6 Years	195	39
7 To 9 Years	160	32
10 -12 Years	35	7

In the present study, maximum number of children belonged to age group 4 to 6 years, making up 39% (195) of the total. Children in the age group 7 to 9 years constituted the next common group making 32% (160). Children belonging to the age group 0 to 3 years constituted 22% (110). The least number of children during the study period belonged to 10 to 12 years, comprising 7% (35) of total children.

##### 3. Socio Economic Status:

**Table No: 3 (n=500)**

Socioeconomic Status	Number	Percentage
Lower Class	360	72
Lower Middle Class	65	13
Upper Middle Class	50	10
Upper Class	25	5
Total	500	100

In the present study, Socioeconomic background was taken into account. It showed that 72% (360) of them belonged to the lower socioeconomic sector. 13% (65) belonged to the lower middle class, while 10% (50) belonged to the upper middle class. It was observed that only 5% (25) of these children belonged to the upper class.

##### 5. Distribution of Pediatric Dermatoses:

**Table No:5 (n=500)**

S.No	Disease	Number	Percentage
1	Infections	160	32
2	Infestations	105	21
3	Eczemas	69	13.8
4	Hypersensitivity Disorders	47	9.39
5	Pigmentary Disorders	20	4
6	Disorders Of Sweat And Sebaceous Glands	19	3.82
7	Papulosquamous Disorders	14	2.8
8	Nutritional Disorders	13	2.7
9	Keratinization Disorders	12	2.4
10	Photodermatoses	11	2.3
11	Nevi And Nevoid Disorders	10	2
12	Disorders Of Hair And Nail	8	1.5
13	Miscellaneous	5	0.89
14	Vesiculobullous Disorders	3	0.6
15	Connective Tissue Diseases And	3	0.6

	Disorders		
16	Genodermatoses	1	0.2
	Total	500	100

In the present study, different types of cutaneous lesions seen in children were categorized according to the etiology. Infections were the commonest cause of various dermatoses. It constituted 32% (160). Infestations were next common group observed making up to 21% (105), Eczemas were the third common dermatoses seen. They constituted about 13.8% (69). Hypersensitivity disorders constituted fourth position. They accounted for about 9.39% (47). This was followed by Pigmentary disorders. It constituted about 4% (20). Disorders of sweat and sebaceous glands were seen in about 3.82% (19).

Papulosquamous diseases were seen in about 2.8% (14), Nutritional disorders were seen in 2.7% (13), keratinization disorders in 2.4% (12), Photodermatoses in 2.3% (11), Nevi and nevoid defects in 2% (10), Disorders of Hair and nails in 1.5% (8), Vesiculobullous diseases in 0.6% (3), Connective tissue diseases and disorders in 0.6% (3), Genodermatoses in 0.2% (1), Miscellaneous in 0.89% (5).

**Harlequin Ichthyosis**



**Xeroderma Pigmentosum**



**Moluscum Contagiosum**



**Nevus Sebaceous**



**Tinea Capitis**

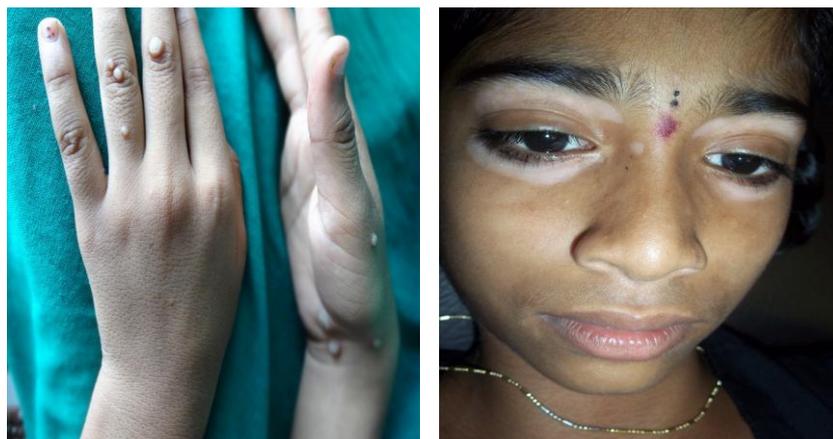


**Scabies**



**Warts**

**Epidermolysis Bullosa**



## V. Discussion

In Present study males constituted about 56% (280) cases and females constituted about 44% (220) cases. Males outnumbered females. In present study, Male to female ratio is about 1.27:1. In a study done by M. D. Al-Mendalawi et al<sup>5</sup>, Male: female ratio was 1.29:1, which is in correlation with the present study. In study conducted by M. D. Al-Mendalawi et al<sup>5</sup>, Rita Vora et al<sup>6</sup>, Iffat Hassan et al<sup>7</sup>, S.Sacchidanand et al<sup>8</sup>, have found males more than females, similar to the present study.

In present study, Infections and Infestations were the commonest dermatoses in children that accounted for 53%. In a study conducted by Kaliaperumal Karthikeyan et al<sup>9</sup>, at JIPMER Pondicherry, Infections and Infestations constituted about 54.5%, which is in correlation with the present study. Sardana K et al<sup>16</sup> showed 47.5%, Manisha Balai et al<sup>10</sup> showed 40.6%. Compared to various other studies mentioned above, higher frequency of Infections and Infestations in present study could be possibly due to large number of population attending the department are of low socio-economic group, who were associated with low hygienic conditions.

In the present study Bacterial infections constituted about 52% of the total Infections. The pattern of bacterial infections found in the present study is in correlation with the study done by Manisha Balai et al<sup>10</sup> In present study, Impetigo was common among preschool and school age children which is consistent with the study of Iffat Hassan et al<sup>7</sup>. Fungal infections constituted about 24% of all infections in our study. In a study done by Iffat Hassan et al<sup>7</sup>, Kaliaperumal Karthikeyan et al<sup>9</sup> and M.D. Al-Mendalawi et al<sup>5</sup>, have found similar pattern of fungal infections, which is in correlation with the present study. In present study, Warts were the most common viral infection followed by Molluscum contagiosum(MC). In study conducted by M. D. Al-Mendalawi et al<sup>5</sup> and Rita Vora et al<sup>6</sup>, warts are the most common viral infection which is followed by MC, which is consistent with the present study.

The Incidence of Infestations was found to be 21% in present study and it included scabies and Pediculosis. Scabies alone constituted majority of this, making 75% of infestations, which is making around 16% of total dermatoses. Kaliaperumal Karthikeyan et al<sup>9</sup>, in his study observed 14.2% of scabies, which is in correlation with the present study. In present study, Pediculosis constituted about 25% of the infestations and 5% of total cases. In a study conducted by M. D. Al-Mendalawi et al<sup>5</sup>, the frequency of pediculosis was found to be 3.6% which is almost near to the present study. An epidemiologic study from Garhwal<sup>15</sup>, Uttar Pradesh, showed that pediculosis capitis (22.6%) was the most common dermatoses, being three times more common in girls.

Eczemas constituted the third common group of dermatoses in the present study. It is seen in about 13.8%. In a study conducted by Dogra et al<sup>18</sup>, Eczemas constituted about 13.8%, which is in correlation with present study. Atopic dermatitis was the commonest eczema seen in the present study. It constituted about 36% of total eczemas and 5% of all dermatoses. In a study by Al-Mendalawi et al<sup>5</sup> and Manisha Balai et al<sup>10</sup>, Atopic dermatitis was the most common eczematous dermatitis similar to present study. In a study conducted by Sardana K et al<sup>16</sup> atopic dermatitis was seen in 5.2%, which is consistent with the present study. In a study conducted by Saurabh sharma et al<sup>11</sup>, atopic dermatitis was seen 3.4%. Pityriasis alba was the second most common eczematous dermatoses seen in present study. It constituted about 23% of all eczemas and 3.2% of all cases. In a study conducted by Rita vora et al<sup>6</sup>, Pityriasis alba constituted about 21.86%, which is in correlation with the present study. Seborrheic dermatitis was the third common eczematous dermatoses in the present study. It constituted about 17% of all eczematous conditions and 2.4% of all dermatoses.

In the present study, Hypersensitivity reactions constituted about fourth common dermatoses. It constitutes about 9.39%. This is consistent with study of Iffat Hassan et al<sup>7</sup>, and Sardana K et al<sup>12</sup> In the present study papular urticaria was the most common hypersensitivity disorder seen. It constitutes about 76% of

hypersensitivity reactions and about 7.2% of all dermatoses. In a study done by Iffat Hassan et al<sup>7</sup>, papular urticaria constituted about 8.9%, which is almost consistent with the present study. In a study by Kaliaperumal Karthikeyan et al<sup>9</sup>, papular urticaria was seen in about 5.27%. and in Manisha Balai et al<sup>10</sup>, papular urticaria constituted about 5.1%. In the present study pigmentary disorders constitute about fifth common dermatoses. It is seen in about 4%. In the present study, vitiligo was the most common pigmentary disorder noted. This was followed by freckles and Albinism. In a study by Saurabh sharma et al<sup>11</sup>, among pigmentary disorders vitiligo was most common, followed by freckles. In a study by Al-Mendalawi et al<sup>5</sup>, among the pigmentary disorders vitiligo was the most common disorder noted.

In the present study, sweat and sebaceous gland disorders constituted about 3.82%. Among them Miliaria was most common, accounted for about 74% of sweat and sebaceous gland disorders and constituted about 2.8% of all dermatoses. In a study done by Iffat Hassan et al<sup>7</sup>, Miliaria was seen in 1%. In study by Saurabh sharma et al<sup>11</sup>, sweat gland disorders constituted about 1.6% of cases. The higher rates of miliaria in the present study could be due to the increased temperature and humidity in the study area.

In present study Papulosquamous disorders accounted for 2.8%, in Iffat Hassan et al<sup>7</sup> it was 1.8%. In Kaliaperumal Karthikeyan et al<sup>9</sup> it was 1.6% The higher rates of papulosquamous disorders in the present study could be attributed to the increased frequency of streptococcal sorethroat in these children and failure to get proper and complete treatment for the same. In present study lichenplanus was most common disorder seen, which accounted for about 42% of papulosquamous disorders.

In the present study nutritional dermatoses was seen in about 2.7%. In a study conducted by Kaliaperumal Karthikeyan et al<sup>9</sup>, nutritional dermatoses were seen in about 2.8%, which is in correlation with the present study. In present study, Phrynoderma was the most common nutritional disorder. Rita vora et al<sup>6</sup>, in his study also found that the Phrynoderma was the most common nutritional disorder which is consistent with present study.

In the present study Keratinisation disorders were seen in 2.4% patients. In study conducted by Kaliaperumal Karthikeyan et al<sup>9</sup>, and Manisha Balai et al<sup>10</sup>, Keratinisation disorders were noted in about 2.1% and 2.53%, which is in correlation with present study. In a study by Saurabh sharma et al<sup>11</sup>, these disorders constituted about 1.1%. The higher occurrence of these keratinisation disorders in present study could be explained by the fact that Government general hospital, Vijayawada is a referral centre.

In present study, most common photodermatoses was Polymorphic light eruption. It constituted about 2.3%. In a study conducted by S Sacchidanand et al<sup>8</sup>, photodermatoses constituted about 2.5% ,which is consistent with the present study. In a study conducted by karthikeyan K et al<sup>9</sup>, the polymorphic light eruption was reported to be about 0.14%. Compared to other studies, increased frequency of polymorphic light eruption in this part of the country could be attributed to increased sun intensity during summer.

In the present study, Nevi constituted about 2%. In various studies reported by Negi et al, nevi range from 1.6 to 2.3%, which is consistent with the present study. In a study conducted by Ruiz –Maldonado R et al<sup>13</sup>, they were reported in about 2.3%, which is in correlation with present study. In present study, among nevi mongolian spot was most common. Senthil kumar et al<sup>14</sup> in his study found out that Mongolian spots were the most common nevi, which is in correlation with present study.

In present study, Hair and nail disorders constitute about 1.5%. In a study conducted by Iffat Hassan et al<sup>7</sup>, hair and nail disorders were seen in about 1.8% which is in correlation with the present study. In the present study most common hair disorder seen was Alopecia areata, followed by canities . Among the nail disorders paronychia was most commonly seen.

In present study, vesiculo bullous disorders constituted about 0.6% of all dermatoses. In study conducted by Manisha et al<sup>10</sup>, these disorders constituted about 0.58%, which is consistent with present study. In study conducted by iffat Hassan et al<sup>7</sup>, vesiculobullous disorders constituted about 0.46% of cases which is in correlation with the present study. In present study, Epidermolysis bullosa simplex was the commonest followed by junctional type of Epidermolysis bullosa.

In present study, connective tissue diseases and disorders, constituted about 0.6% of all dermatoses. In a study conducted by Karthikeyan K et al<sup>9</sup>. they constituted about 0.5% of cases, which is in correlation with present study. Among collagen vascular disorders one case of Morphea and a one case of Dermatomyositis in a female child had been reported.

In present study, genodermatoses was seen in about 0.2%. One case of Xeroderma pigmentosum in a nine year old boy had been recorded

## **VI. Conclusion**

The present study brings into light the unique features of Tropical pediatric dermatology such as high frequency of dermatoses like infections and infestations, Eczemas and environment associated disorders (insect bite reaction and miliaria).

The incidence of pediatric dermatoses can be brought down by increasing awareness among the

population regarding etiology and spread of pediatric diseases and by improving sanitation, nutrition and personal hygiene of children.

This study provides a preliminary baseline data for future epidemiological and clinical research. It might also help to assess the changing trends of pediatric dermatoses.

It is important to determine the prevalence of skin disorders so that necessary educational programs and preventive measures can be performed. Health education and good personal hygiene will definitely help to improve the health status of school children.

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