

## STUDY OF INFECTIOUS DERMATOSES PATTERN IN PAEDIATRIC PATIENTS IN SOUTHEAST RAJASTHAN

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### ABSTRACT

**Background:** In children both infectious and non-infectious agents are found to be responsible. Present study was planned to see the pattern of infectious dermatoses in paediatric population in a region of south east Rajasthan.

**Materials and methods:** The study was conducted at Department of the dermatology of Ananta Institute of Medical Sciences and Research Centre, Rajsamand in the period of 10 months from Feb. 2017 to Aug. 2017. Total 746 patients below 14 years visiting the dermatology department during the study period were included in the study. The cases suspected having infectious dermatoses were further followed. The patients were divided into four age groups: below 1 year, 1-5 years, 5-10 years and 10-14 years and the results were analysed. Results- Out of 746 cases included infectious dermatoses were diagnosed in 310 cases (41.55%) with a slight predominance of male patients (175 males; 135 females). The maximum patients were from the age group of 5-10 years. The maximum patients were from the age group of 5-10 years. most common types of infections were bacterial followed by fungal infections, infestations and viral infections respectively. Conclusion- Younger school going children of 5-10 years are the most affected age group. Regular skin checkups should be encouraged at school and awareness should be raised about hygiene and screening of skin problems among parents.

**Keywords:** infectious and non-infectious agents, skin disorders, Impetigo, Furuncle, Folliculitis, carbuncle, Acne vulgaris

### INTRODUCTION

The incidence of dermatoses is influenced by many factors including climate, lifestyle, immunity, genetic makeup and age of the individual.(1) Paediatric population is dependent on the other age groups for many requirements including a healthy life. In children both infectious and non-infectious agents are found to be responsible (2, 8, 12, and 14). Infections are reported to be the major cause of paediatric dermatoses in India (2, 8, 14) while in developed countries most of the causes are non infectious (14).

Skin diseases account for a significant fraction of children visiting the clinics (10, 17). The pattern of dermatoses is helpful in disease control, management of preventive measures and health education in a region. Present study was planned to see the pattern of infectious dermatoses in paediatric population in a region of south east Rajasthan.

## MATERIALS AND METHODS

The study was conducted at Department of the dermatology of Ananta Institute of Medical Sciences and Research Centre, Rajsamand in the period of 10 months from Feb. 2017 to Aug. 2017. After receiving the ethical approval for the study informed consent was obtained for the patients included in the study.

Total 746 patients below 14 years visiting the dermatology department during the study period were included in the study. The cases diagnosed with a non infectious aetiology of the disease were excluded from the study. The cases suspected having infectious dermatoses were further followed. The diagnosis was done on the basis of history, clinical features, physical examination of skin, Wood's lamp examination, Gram's stain, KOH mount, and skin biopsy as needed. Bacterial and fungal culture results were followed with biochemistry analysis for the confirmation of aetiology. The patients were divided into four age groups: below 1 year, 1-5 years, 5-10 years and 10-14 years and the results were analysed accordingly.

## RESULTS

Out of 746 cases included infectious dermatoses were diagnosed in 310 cases (41.55%) with a slight

predominance of male patients (175 males; 135 females). The maximum patients were from the age group of 5-10 years. Table 1 shows the distribution of total cases of dermatoses and cases of infectious dermatoses in the various age groups.

**Table 1- Total cases of dermatoses and cases of infectious dermatoses in the four age groups**

S. No.	Age groups	Total cases of dermatoses	Number of Infectious dermatoses
1	0- 1 year	70	39
2	1- 5 years	169	60
3	5- 10 years	315	128
4	10- 14 years	192	83
	<b>Total</b>	<b>746</b>	<b>310</b>

Among the 310 cases of infectious dermatoses the most common types of infections were bacterial followed by fungal infections, infestations and viral infections respectively. The distribution of different aetiological agents in the four age groups is shown in Table 2.

**Table 2- The distribution of different aetiological agents in the four age groups**

Age group	Infectious dermatoses/Total cases	bacterial	fungal	viral	infestations
<b>0- 1 year</b>	39	18/39 (46.15%)	10 (25.64%)	3 (7.69%)	8 (20.51%)
<b>1-5 years</b>	60	28/60 (46.66%)	15/60 (25%)	9/60 (15%)	8/60 (13.33%)
<b>5-10 years</b>	128	49/128 (38.28%)	32/128 (25%)	17/128 (13.28%)	30/128 (23.43%)
<b>10-14 years</b>	83	27/83 (32.5%)	20/83 (24.09%)	11/83 (13.25%)	24/83 (28.9%)
<b>Total</b>	<b>310</b>	<b>122 (39.39%)</b>	<b>77(24.88%)</b>	<b>40 (12.90%)</b>	<b>71(22.90%)</b>

The most common type of bacterial infections was impetigo followed by furuncles and among the fungal infections tinea capitis was the most common type

followed by candidiasis. Only two types of infestations namely scabies and pediculosis were observed in the study population. Highest percentage of scabies was observed in the age group of 0-1 year and the highest

percentage of pediculosis was observed in the age group of 10-14 years. The least common aetiology of infectious dermatoses found in all age groups was

viruses. Molluscum contagiosum was the most common viral infection followed by Herpes Simplex and Herpes Zoster (Table 3).

**Table 3- detailed aetiology of the infectious agents in the four study groups.**

Aetiology	Total	0- 1 years	1-5 years	5-10 years	10-14 years
<b>Bacterial</b>	<b>122</b>	<b>18/122</b>	28/122	49/122	27/122
<b>Impetigo</b>	68	12	19	28	9
<b>Furuncle</b>	19	6	7	5	1
<b>Folliculitis</b>	17	0	0	12	5
<b>carbuncle</b>	4	0	1	1	2
<b>Acne vulgaris</b>	8	<b>0</b>	0	0	8
<b>Paronychia</b>	6	<b>0</b>	1	3	2
<b>Fungal infections</b>	<b>77</b>	<b>10/77</b>	<b>15/77</b>	<b>32/77</b>	<b>20/77</b>
<b>Tinea capitis</b>	24	2	8	13	1
<b>Candidiasis</b>	23	7	2	11	3
<b>Tinea corporis</b>	16	0	2	2	12
<b>Tinea versicolour</b>	14	1	3	6	4
<b>Infestations</b>	<b>71</b>	<b>8/71</b>	<b>8/71</b>	<b>30/71</b>	<b>25/71</b>
<b>Scabies</b>	19	7	1	8	4
<b>Pediculosis capitis</b>	52	1	7	22	21
<b>Viral infections</b>	<b>40</b>	<b>3/40</b>	<b>9/40</b>	<b>17/40</b>	<b>11/40</b>
<b>Molluscum contagiosum</b>	18	2	5	8	3
<b>Herpes zoster</b>	7	1	1	4	1
<b>Herpes simplex</b>	7	0	2	2	3
<b>Warts (HPV)</b>	4	0	0	1	3
<b>Chicken pox</b>	4	0	1	2	1
<b>Total</b>	<b>310</b>	39	60	128	83

## DISCUSSION

Dermatological problems are common in all age groups. Information of aetiology of the infectious dermatoses in a particular area helps in the differential diagnosis and the control of the diseases at demographic level. Present study analyse causative agents of infectious dermatoses in paediatric age group.

Out of 746 samples included in the study 310 cases (41.55%) were of infectious dermatoses. Balai et. al (2). reported 40.6% of infectious dermatoses in his study from Udaipur. Patel et. al (14). (2016) and Jawade et. al.,8 reported 52.55% and 49.16% cases of

infectious aetiology among the cases of dermatoses in paediatric age group.

In the present study male population clearly outnumbered the female population with a male female ratio of 1.29. Similar results were reported in other studies (2, 9, 11, 14) from various regions of the country.

Among the cases having dermatoses the maximum number of patients was from the age group of school going children of 5-10 years. This may be due to the fact that the children at this age are more exposed to the environment while still being young. Similar results were reported by Jawade et al, Nagarajan et al. and Sharma et al (8, 11, 19).

Out of the total 310 cases infective dermatoses, the most common type was bacterial infections (122, 39.39%) followed by fungal infections (77; 24.88%), infestations (71, 22.90%) and viral infections (40, 12.90%) respectively. In another study conducted in same area by Balai et al (2), similar results were seen. Almost similar results were observed by Sandeepthi et al.4 in Guntoor, though mycobacterial infections were not seen in the present study. Other studies (6, 10, 16) from the various regions also reported this trend. However many studies (8, 9, 14) have reported the maximum incidence of infestations in the paediatric age group while Nagarajan et al.(11) observed the maximum incidence of viral infections and Reddy & Rao (15), Sayal et al.,(17) reported maximum incidence of fungal infections. The variation in the observation may be due to differences in the geographical and environmental factors, hygiene and nutritional status of the study population.

The most common type of bacterial infection was impetigo followed by furuncles which is in line with observations of many other studies (2, 4, 8, 14). Acne vulgaris and folliculitis was not observed in infants and younger children which is in line with other studies (14).

Majority of fungal infection included Tinea capitis and candidiasis which similar to the observation reported by many other studies (2, 5, 8) 16 from the different regions. In the present study the most common viral infection was Molluscum contagiosum. Other studies (2, 5, 8, 13) also reported the maximum incidence of Molluscum Contagiosum in the paediatric population Other viral infections of skin seen in the study population were Herpes Simplex, Herpes Zoster, Human Papilloma Virus and Varicella zoster.

Only two types of infestations were also observed in the study population. Pediculosis was seen in higher number patients than scabies. These results are similar to the findings reported by Jose et al.,9 Bhatia et al.,(3) while Balai et al., (2) Karthikeyan et al.,10 Negi et al.,(12) and Patel et al.,(14) reported higher incidence of scabies. Majority of cases infested by pediculosis were from the age groups of school going children where they come into contact with other children and get the infestation while in the infants scabies was

found to the more common type of infection. These observations are in agreement with other studies (14).

It can be concluded from the present study that infectious dermatoses are present in a significant fraction in the cases of paediatric dermatoses. Bacterial, fungal, viral infection and infestations of scabies and pediculosis are the common aetiologies. Awareness to the symptoms and progression can help to check the incidence of infectious dermatoses. Younger school going children of 5-10 years are the most affected age group. Regular skin checkups should be encouraged at school and awareness should be raised about hygiene and screening of skin problems among parents. Present study also provides baseline data for clinical, epidemiological and research benefits.

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