https://doi.org/10.22502/jlmc.v4i1.75

Original Research Article

Seasonal Variation of Pediatric Dermatoses: A Hospital Based Study in Western Hilly Nepal

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ABSTRACT:

Introduction: Skin diseases are common in children; however they differ depending in age, region, socioeconomic status and climate. Many studies have been done to study pattern of dermatological disease in pediatric age group but only few studies have been done in its seasonal variation. So we decided to study seasonal variation of pediatric dermatoses. **Methods**: This was a retrospective study done from hospital records of Lumbini Medical College Teaching Hospital (LMCTH). All children 14 years and below attending the Dermatology out-patient clinic with skin diseases between the period of March 2015 to February 2016 were included. Demographic, clinical and laboratory details were recorded. Data were collected and categorized according to four seasons. Microsoft Excel was used for data entry while all analysis, both descriptive and inferential, was done using SPSS version 22. **Results**: There were a total of 987 children visiting Dermatology clinic during the study period. Of those, 520 (52.7%) were male and the remaining 467 (47.3%) were female with M:F ratio of 1.1:1. Most of the disorders were seen between 10-14 years of age. Majority of visits were in summer (*n*=403, 40.8%) followed by spring, autumn and winter. Most common dermatosis seen among children during summer was fungal infection (*n*=91, 9.2%) and during winter was eczema (*n*=49, 5%). **Conclusion**: In the present setting there is seasonal variation of dermatological diseases in pediatric age group.

Keywords: seasonal • variation • pediatrics • skin diseases

INTRODUCTION:

Seasonal variation in skin disease has been observed and studied since centuries. Pediatric dermatoses are common in dermatology clinic and these are directly or indirectly affected by climate. Various climatic factors that may determine the incidence of skin diseases are cold, heat, light, sunshine and humidity.[1] Skin diseases are one of the major health problems in children and are associated with significant morbitity.[2]

Nepal is a Himalayan country located 28°N and 84°E in the Indian subcontinent.[3] Having a population of 24.1 million (2001 census), it comprises of the mountains in the north, the central hills, and the southern terai plains, with climate varying from arctic type in the north to tropical type in the south.[4]

In our country Nepal, where there is a wide range of climate and where pediatric population constitutes significant proportion of total population, there is a need to study the seasonal variation of pediatric dermatoses. As only a few study has been done about the seasonal variation of skin disease in pediatric age-group, we decided to conduct this study.

METHODS:

This was a retrospective study conducted in department of Dermatology at Lumbini Medical College Teaching Hospital (LMCTH), Nepal. Ethical clearance was taken from the Institutional review committee of LMCTH. Demographic, clinical and laboratory details of all the new cases aged 0 to 14 years, between March 2015 to February

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How to cite this article:
Shrestha P, Mikrani JA. Seasonal variation of pediatric dermatoses: a hospital based study in western hilly Nepal. Journal of Lumbini Medical College. 2016;4(1):32-4. doi: 10.22502/jlmc.v4i1.75.

2016, were collected from the records of the out patient clinic of LMCTH. The data obtained were divided into four seasons comprising of spring (March to May), summer (June to August), autumn (September to November), and winter (December to February). The age group of children, included in the study was divided into less than one year (infants), 1-5 years (toddlers and preschool children), 6-10 (School Children), and 11-14 years (adolescent). The dermatoses were divided into different groups and their frequency with respect to age and season was noted. Microsoft Excel was used for data entry while all analysis both descriptive and inferential was done using SPSS version 22. *P* value of 0.05 was considered as significant.

RESULT:

There were a total of 987 children with skin diseases visiting the out-patient clinic during the study period. Of those, 520 (52.7%) were male and the remaining 467 (47.3%) were female with M:F ratio of 1.1:1. Mean age of male was 7.8 yr (*SD*=4.55) and that of female was 7.7 yr (*SD*=4.3) and the difference was not statistically significant (*t*=0.52, *df*=985, *p*=0.6). Most of dermatoses was seen in summer (*n*=403, 40.80%), followed by spring (*n*=250, 25.30%), autumn (*n*=168, 17%), and winter (*n*=166, 16.80%). The majority of dermatoses belonged to fungal infection (*n*=154, 15.6%) followed by eczema (*n*=120, 12.2%), and scabies (*n*=118, 12%). Fungal infection being most common in summer and least in winter. Eczema was most commonly seen in winter followed by summer. Similarly scabies was commonly seen in summer and spring (Table 1).

Out of the total 987 patients, 405 (41%) belonged to 11-14 age group followed by 294 (29.8%) to 6-10 age group, 206 (20.9%) to 1-5 age group and 82 (8.3%) to infant age group. Fungal infection was a single most common dermatoses in adolescent (11-14 yr) followed by acne and scabies. In 6-10 age group, eczema was the most common followed by fungal infection and bacterial infection. In 1-5 age group, scabies and fungal infection were the most common followed by viral infection. In infants, eczema was the most common followed by milaria and Bacterial infection (Table 2).

Table 1*: Seasonal trend of different dematoses*

Diagnosis	Summer	Winter	Spring	Autumn	*n*	%
Bacterial infection	50	6	39	10	105	10.6
Hair Disorder	10	28	3	26	67	6.8
Milaria	43	3	28	4	78	7.9
Scabies	45	16	39	18	118	12
Eczema	47	49	24	0	120	12.2
Fungal Infection	91	7	34	22	154	15.6
Pigmentary Disorder	16	6	12	18	52	5.3
Urticaria	14	21	12	26	73	7.4
Viral Infection	18	13	24	16	71	7.2
Acne	48	4	20	16	88	8.9
Papulosquamous Disorder	3	4	0	3	10	1.0
Drug Rx	2	6	3	4	15	1.5
Others	16	3	12	5	36	3.6
Total	**403**	**166**	**250**	**168**	**987**	**100**
Percentage	**40.8**	**16.8**	**25.3**	**17**	**100**	

Table 2*: Distribution of dermatoses in different age group*

Diagnosis	Age-Group (years)				*n*
	<1	1-5	6-10	11-14	
Bacterial infection	13	23	33	36	105
Hair Disorder	8	15	18	26	67
Milaria	14	21	28	15	78
Scabies	6	29	34	49	118
Eczema	18	16	39	47	120
Fungal Infection	11	29	38	76	154
Pigmentary Disorder	0	12	16	24	52
Urticaria	0	25	22	26	73
Viral Infection	0	28	27	16	71
Acne	0	0	24	64	88
Papulosquamous Disorder	0	0	4	6	10
Drug Rx	0	0	5	10	15
Others	12	8	6	10	36
Total	**82**	**206**	**294**	**405**	**987**
Percentage	**8.3**	**20.9**	**29.8**	**41**	**100**

DISCUSSION:

The pattern of skin diseases in pediatric age group vary from one country to another and within the same country from one region to another due to various climatic, cultural and socio-economic factors.[5] Epidemiological data on pediatric dermatoses provides a tool to assess the quality of child health care and build community based health care strategies.[6]

The high male to female ratio in our study is

comparable with recent study done by Sharma S. et al. and Patel JK. et al.[7,8] Similarly, Rather SR. et al. reported high frequency in male, with M:F ratio of 1.63:1.[9] The study done by Poudyal et al. found that the frequency of male children was more common (54.7%) than female.[10]

There was a wide variation of dermatoses in various season with fungal infection being commonest in summer and eczema being commonest in winter in our study. This was supported by various other studies.[7,10] But, in a study done by Shrestha et al. and Banerjee et al., impetigo was the commonest skin problem with more prevalence in the summer.[11,12] A study done by Sayal et al. also showed fungal infection to be more common than bacterial and viral infection.[13] It can be due to climatic variation in different region of the country. This reflects the fact that warm and humid climate creates the environment for development of fungal infection.[14]

Distribution of pediatric dermatoses in different age group is also important where fungal infection is most common in 11-14 yrs of age in our study. Similar result was seen in study done by Poudyal et al.[10] But in studies done by Rather SR. et al. and Gul U. et al., acne vulgaris was the single most common dermatoses in adolescents unlike other age group.[9,15]

Milaria was most commonly seen in summer with highest prevalence in 6-10 years age group. As milaria occurs commonly in hot, humid environments, it explains high prevalence in summer in our study. This was supported in study done by Shrestha et al. with highest incidence in infants.[11] Similarly study done by Rather SR. et al. also showed highest incidence of milaria in summer.[9] Study done by Banerjee S. et al. revealed that milaria was second most common disease in under five children.[12]

CONCLUSION:

This study provides important data on frequency of dermatological diseases in pediatric patients and its seasonal variation with fungal infection being commonest in summer and eczema in winter. In order to plan for better health care management in children, it is mandatory to have idea about pediatric dermatosis. In the present study we have attempted to acquire sufficient information regarding seasonal variation of pediatric dermatosis. Data can be useful in planning of better health programs for children. More survey are required to study the pattern of pediatric dermatology and its seasonal variation in different region of country.

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