CLINICAL PATTERN OF PEDIATRIC DERMATOSES ATTENDING A MULTI-SPECIALTY HOSPITAL

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ARTICLE INFO

Received : 07 July, 2020

Accepted : 26 January, 2021

Published : 15 June, 2021

ORA 218

DOI: https://doi.org/10.3126/bjhs.v6i1.37554

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Citation

Harendra Kumar Jha. Clinical Pattern of Pediatric Dermatoses Attending A Multi-specialty Hospital. BJHS 2021;6(1)14. 1269-1273.

ABSTRACT

Introduction

Pediatric dermatoses deal with skin disease in children from birth to 18 years. This age group comprises significant physiological changes, and hence the pattern of disease including skin disease is unique to them. Skin diseases are influenced by the local climatic factor and socio-economic status which differ in different geographic areas including within the country.

Objective

The objective of the study was to analyze the clinical spectrum of skin disease in children from 1 day to 18 years of age and to find any seasonal influence on the disease pattern.

Methodology

The study was conducted retrospectively in a multi-specialty hospital from May 2014 to April 2015. Data of children from 1 day to 18 years of age were analyzed. Demographic details like age, sex, ethnicity was noted. The month and season of the presentation were also recorded. Patient with a confirmed clinical diagnosis and adequate data was included in the study. Patients were divided into 5 age groups; neonate (0 days to 1 month), infant (1 month to 2 years), young child (2-6 years), child (6-12 years), and adolescent (12-18 years). Data were entered in Microsoft excel and analysis was done with SPSS version 22 along with the Chi-square test.

Result

There were 20.65% of pediatric patients out of 3292 patients visiting skin OPD. The male to female ratio was 1.63:1. The majority of the cases (47.8%) were in the adolescent age group. Infection and infestation were the predominant diagnosis (56.02%), followed by eczema (15.88%) and urticaria (6.47%). Among infection, fungal infection was seen as the majority (26.17%).Papular urticaria and urticaria were significantly (p-value <0.05) more common in summer, while scabies was more common in the spring season (p-value <0.05).

Conclusion

Infection and infestation followed by eczema/dermatitis and urticaria were the three most common groups of dermatoses. There was a seasonal influence on a few common dermatoses like scabies, urticaria and papular urticaria.

KEYWORDS

Eczema, infection, papular urticaria, pediatric, season

INTRODUCTION

Nepal is a country with 40% of the young population below 18 years of age.[1] Skin disease is a common problem in the pediatric age group. The clinical spectrum of disease may be different in the world, region, country and even within the country. It becomes important to identify the most prevalent disease, so that adequate planning, research and resource mobilization can be done to manage it effectively. Most studies in Nepal have included children up to 14 years of age, while the pediatric age group is considered from birth to 18 years of age.[2] In the best of knowledge, this may be the first study in children in the mentioned age group from Nepal.

METHODOLOGY

The study was a retrospective descriptive study based in a multi-specialty hospital. The medical record of pediatric patients attending dermatology OPD from May 2014 to April 2015 was taken into the study. Patients were divided into 5 age groups; neonate (0-30days), infant (1 month to 2 years), young child (2-6 years), child (6-12 years) and adolescent (12-18 years). Since there were no children in the neonate age group, only children from infant age was included in the study. Demographic details like age, sex, ethnicity was noted. The month and season of the presentation were also recorded. Patients with unconfirmed diagnoses and inadequate data were excluded from the study. A total of 680 patients were included in the study out of 3292 patients for one year. The data were entered in Microsoft Excel and statistical analysis was carried out with SPSS version 22. Chi-square test was applied to know the significance of the effect of season on pediatric dermatoses occurrence, where p-value <0.05 was considered significant. Informed consent from the patients was taken and ethical clearance for the study was obtained.

RESULTS

The total number of pediatric age group patients was 680 (20.65%), out of 3292 patients visiting the out-patient department (OPD). The age ranged from 2 months to 18 years. The mean age was 10.29 years and the majority of patients (325,47.8%) were in the 12-18 years age group. Male patients comprised of 62% and female 38% giving rise to male to female ratio of 1.63:1. Age and sex distribution of patients is given in table 1.

Table 1: Age and sex distribution of patients

	1month-2 year	2-6 year	6-12 year	12-18 years	Total (%)
Male	59	63	94	206	422 (62%)
Female	38	57	44	119	258 (38%)
Total	**97**	**120**	**138**	**325**	**680**

Infection and infestation dermatoses comprised nearly 56.02% (381 patients), out of which fungal infection contributed for 178 diagnoses (26.17%), followed by mite and arthropod infestation (132, 19.41%), viral illness (46, 6.76%) and bacterial illness (25, 3.67%). Eczema and dermatitis comprised the second most common group of illnesses which was seen in 108 patients (15.88%). Urticaria/ angioedema was the third most common group of illnesses (44, 6.47%) closely followed by acne (43, 6.32%). Various other diseases that were commonly seen were sweat gland disorder (19, 2.79%), hair and nail disease (17, 2.5%), papulo-squamous disease (16, 2.35%), pigmentary disorder (15, 2.20%). The miscellaneous group included the rest of the 37 diagnoses. In all age groups, the most common diagnosis was fungal infection (3.5-14%) followed by eczema/ dermatitis (2.5-6.17%). In infant and young child third most common diagnosis was papular urticaria (2.35 and 2.5% respectively) while it was scabies (2.5%) in children (6-12 years) and acne (5.29%) in the adolescent age group. The age-wise distribution of various diseases is given in table 2.

Table 2: Age-wise distribution of disease

Diagnosis	1 month-2year	2-6 year	6-12 year	12-18 year	Total	%
Infection						
Fungal	24	30	28	96	178	26.17%
Viral	6	7	14	19	46	6.76%
Bacterial	2	6	5	12	25	3.67%
Infestation						
Scabies	10	11	17	29	67	9.85%
Arthropod	3	0	1	8	12	1.76%
Papular urticaria	16	17	5	15	53	7.79%
Eczema/dermatitis	17	24	25	42	108	15.88%
Acne	0	0	7	36	43	6.32%
Urticaria and angioedema	7	8	9	20	44	6.47%
Sweat gland disease	2	5	4	8	19	2.79%
Papulo-squamous disease	0	3	4	9	16	2.35%
Hair/nail disease	1	0	4	12	17	2.5%
Vitiligo	3	3	4	5	15	2.20%
Miscellaneous	6	6	11	14	37	5.44%
Total	**97**	**120**	**138**	**325**	**680**	

Both males and females had a fungal infection (16.47 and 9.70% respectively) and eczema/dermatitis (10.29 and 5.58% respectively) as the most common diagnosis. Scabies (7.5%) was the third most common diagnosis in male while it was acne (3.08%) in females. Sex wise distribution of disease is given in table 3.

Majority of cases presented during the summer (228 cases, 33.52%) and autumn (178 cases, 26.17%), while it was less in winter (117 cases, 17.2%) again peaking up in spring (157 cases, 23.08%). The analysis of seasonal influence on the 5 most common diseases showed significant association with scabies, papular urticaria and urticaria, while there was no association with dermatophyte infection and acne. Scabies was more common during spring and less in autumn ($c2= 19.95$, $p<0.000174$), while papular urticaria ($c2=9.965$, $p<0.01886$) and urticaria ($c2=9.667$, $p<0.021621$) had a peak in summer and less during the winter season. Seasonal trend of 5 common dermatoses is given in table 4. Brahmin

and Chhetri contributed to the majority of patients (51%), followed by Hill Janajati (20.29%), Tharu (10.29%), Hill Dalit (9.11%), Newar (5.73%) and others (3.67%).

Table 3: Sex wise distribution of disease

Diagnosis	Male	Female	Total
Infection			
Fungal	112	66	178
Viral	28	18	46
bacterial	8	17	25
Infestation			
Scabies	51	16	67
Arthropod	6	6	12
Papular urticaria	36	17	53
Eczema/dermatitis	70	38	108
Urticaria and angioedema	27	17	44
Acne	22	21	43
Sweat gland disease	13	6	19
Papulo-squamous disease	11	5	16
Hair/nail disease	12	5	17
Vitiligo	7	8	15
Miscellaneous	19	18	37
Total	**422**	**258**	**680**

other studies from Nepal.[5,8] The majority of cases were seen in children in 12-18 years of age group (47.79%). A similar finding was noticed by Reddy et al.[9] The inclusion of children up to 18 years might have played a role in this observation.

Infection and infestation formed the majority of diagnosis (56.02%). It was almost similar to the observation made by Karthikeyan et al (54.5%)[10] but more than Neupane et al (48%).[5] Various other authors have reported the occurrence of 35.6% to 85.2%.[10] The higher percentage of infection and infestation may be due to environmental (high temperature and humidity) and relatively poor hygienic conditions. Fungal infection formed the majority of infection which is consistent with other studies from Nepal,[3,8] however our study had found more incidence. Neupane et al found bacterial infection as the most common infection in children.[5] This finding reflects the variation in different regions within the country. Scabies was the most common among infestations and significantly more common in males than females. Poudyal et al found a lower prevalence (4.4%) of scabies but more common in males.[3] Overcrowding conditions like in school hostels, poor maintenance of hygiene compared to females may explain this finding. Papular urticaria was more common below 6 years of age group, which was a similar observation made by Banergee et al.[11] It is more common in small children since their immune system is sensitive to insect bite, older children probably outgrow disease by desensitisation.[12]

Eczema and dermatitis were the second most common group of dermatoses (15.88%). Similar results were reported by Poudyal et al (14.4%)[3] and Nagarajan et al (14.5%).[13] One study from Nepal had more cases of eczema (26.46%) than infections.[4] This might reflect a changing trend of disease within the country with the change in regional climatic conditions. Majority of eczema cases were endogenous (12.5%) while exogenous eczema accounted for 3.38%. The prevalence of exogenous eczema was comparable to the finding by Reddy et al (4.3%).[9] Among endogenous eczema, atopic dermatitis (2.94%) was followed by seborrheic dermatitis (2.64%) and pityriasis alba (1.47%) as the most common ones. Comparable findings were found by Neupane et al.[5] Incidence of atopic dermatitis ranges from 3.1% to 28% in developed countries.[10] The lower prevalence in our study may be related to climate and dietary habits compared to western countries. Acne was significantly more common in the adolescent age group, which is similar

Table 4: Seasonal trend of 5 common dermatoses

Diagnosis	Spring	Summer	Autumn	Winter	Mean	c^2	P-value
Dermatophyte	26	46	47	28	36.75	5.426	0.143112
Scabies	25	18	6	18	16.75	19.95	0.000174
Papular urticaria	13	27	8	5	13.25	9.965	0.01886
Urticaria	9	23	10	2	11	9.667	0.021621
Acne	11	15	8	9	10.75	1.524	0.676716

DISCUSSION

Pediatric dermatology is developing field within dermatology and epidemiological data focusing on the disease trend are helpful in appropriate planning and intervention. The clinical trend of pediatric dermatoses is known to differ among countries, regions and even within the country. This study was done to study the clinical spectrum of disease in children between 1 day to 18 years and the effect of seasonal variation in a multi-specialty hospital set up in the central Terai region of Nepal. The prevalence of pediatric dermatoses was found to be 20.65% which is consistent with other studies from Nepal.[3,4] However, one study from Nepal, found a low prevalence than our study.[5] This difference may be due to environmental, socio-cultural factors and also different study inclusion criteria. The high male to female ratio in this study is similar to study done by Patel et al[6]and Medasani et al.[7] However, it was more than

to the observation made by Sacchidanand et al.[14] Hormonal changes during the adolescent year, increased sebaceous gland activity might explain this finding.

The effect of weather on pediatric dermatoses was also apparent in our study. Most cases presented during summer and autumn season, while it was less in winter and again peaking up in spring. This finding was consistent with Poudyal et al.[3] Among 5 common dermatoses, there was a significant effect of season on scabies, papular urticaria and urticaria. Scabies was more common in spring and less in autumn. While previous studies[3,15] have shown scabies to be most common during winter, our finding might reflect changing trends in its occurrence which need to be substantiated with much larger studies. Papular urticaria was more common during the summer, which might be explained by the fact that children wear scanty clothing during those weathers and high probability of insect bite during the same. A few studies also have found that papular urticaria is more common during summer also a rainy season in Nepal and India.[16,17] Urticaria was more common during the summer. This can be explained by the fact that urticaria may be triggered by heat and sweat and there is an increased amount of allergen in the environment during summer. Dermatophyte infection and acne did not show any seasonal variance.

Phrynoderma was seen in 4 patients. It is an important finding and needs to be highlighted since it continues to be seen despite government efforts like the vitamin A program. Some genetic dermatoses were also seen like neurofibromatosis, ichthyosis vulgaris, infantile hemangioma. Few cases of verrucous epidermal nevus, nevus sebaceous, nevus of Ota was also seen. These findings though rare, are important conditions and need to be addressed carefully with appropriate counseling to the parents.

CONCLUSION

This study brings about the different clinical spectrum of pediatric dermatoses and the influence of season on common dermatoses. Infection and infestation comprised the majority of diagnosis, followed by eczema and urticaria. The majority of patients were in the child and adolescent age group. Most of the disease presented during the summer and autumn and least in winter. Few common dermatoses also had seasonal influence.

The data on variation in disease patterns and seasonal influence from different regions within the country may help health care providers, policymakers and the government to formulate appropriate measures to diagnose, treat and take preventive measures.

RECOMMENDATION

The epidemiological data from different regions of the country can be studied together to formulate national health policy, management and preventive guidelines. Also, much larger scale study and multi-center trials are required to substantiate previous findings.

LIMITATION

This study is based on a multi-specialty hospital where a specific group of patient present for consultation and may not reflect the actual disease prevalent in the community.

ACKNOWLEDGMENT

I would like to thank my patients, staff and statistician of the hospital for their roles in completing this work.

CONFLICT OF INTEREST

None

FINANCIAL DISCLOSURE

There was no financial support from any individual or organization to prepare this article.

REFERENCES

1. Children in Nepal [Internet]. UNICEF Nepal. [cited 2020Jun15]. Available from: https://www.unicef.org/nepal/children-nepal
2. Frequently asked questions on the Convention on the Rights of the Child [Internet]. UNICEF. [cited 2020Jun15]. Available from: https://www.unicef.org/child-rights-convention/frequently-asked-questions.
3. PoudyalY,Ranjit A, Pathak S, Chaudhary N. Pattern of Pediatric Dermatoses in a Tertiary Care Hospital of Western Nepal. Dermatol Res Pract. 2016 2016; 2016: 6306404.DOI: 10.1155/2016/6306404.
4. Shrestha R, Shrestha D, DhakalAK, ShakyaA, Shah SC, Shakya H. Spectrum of Pediatric Dermatoses in Tertiary Care Center in Nepal. Nepal Med Coll J. 2012;14(2):146-8.PMID: 23671967
5. Neupane S, Pandey P. Spectrum of dermatoses among paediatric patients in a teaching hospital of Western Nepal.Nepal J Dermatol VenereolLeprol. 2012;10(1):20-6.DOI: 10.3126/njdvl.v10i1.6419
6. Patel KB, Desai BR. Pediatric dermatoses encountered in dermatology outpatientdepartment of a teaching institute. Int J ContempPediatr. 2016;3(4):1178-84. DOI: 10.18203/2349-3291.ijcp20163652.
7. Medasani V, Oudeacoumar P, Chitralekhya R, Misra SK. Prevalence of paediatric dermatoses among patients attending Dermatology outpatient department in a tertiary care hospital in Puducherry. Int J Res Dermatol. 2018;4(3):368-75. DOI:10.18203/issn.2455-4529. Int JRes Dermatol 20183160
8. Sharma R. Pattern of Paediatric Dermatoses in a Tertiary Referral Centre, Nepal. Nepal J Dermatol VenereolLeprol. 2019;17(1):39-41. DOI: 10.3126/njdvl.v17i1.23249.
9. Reddy VS, Anoop T, Ajayakumar S, Bindurani S, Rajiv S, Bifi J. Study of clinical spectrum of pediatric dermatoses in patients attending a Tertiary Care Center in North Kerala.Indian J Paediatr Dermatol. 2016;17(4):267-72.DOI: 10.4103/2319-7250.188424.

10. Karthikeyan K, Thappa DM, Jeevankumar B. Pattern of pediatric dermatoses in a referral centre in South India. In Pediatr. 2004;41 (4):373-7. PMID: 15123866
11. Banerjee S, Gangopadhyay DN, Jana S, Chanda M. Seasonal variation in pediatric dermatoses. Indian J Dermatol. 2010;55(1):44-6. DOI: 10.4103/0019-5154.60351.
12. Demain JG. Papular urticaria and things that bite in the night. Curr Allergy Asthma Rep. 2003;3(4):291-303.DOI: 10.1007/s11882-003-0089-3.
13. Nagarajan K, Thokchom NS, Ibochouba K, Verma K, Hafi B. Pattern of pediatric dermatoses in Northeast India. Indian J Pediatr Dermatol. 2017;18(4):286-91. DOI: 10.4103/ijpd.IJPD_66_17.
14. SacchidanandS, SahanaMS, AshaGS, Shilpa K. Pattern of pediatric dermatoses at a referral centre. Indian J Pediatr. 2014;81(4):375-80.DOI: 10.1007/s12098-012-0904-8
15. KumarU,Varma K, Khairwar PK. Seasonal variation of pediatric dermatoses:a retrospective study conducted in tertiary care centre Ujjain. Int J Res Dermatol. 2018;4(2):168-171. DOI: 10.18203/ issn. 2455-4529. IntJ Res Dermatol20181816.
16. Balai M, Khare AK, Gupta LK, Mittal A, Kuldeep CM. Pattern of Pediatric Dermatoses in a Tertiary Care Centre of South West Rajasthan. Indian J Dermatol. 2012;57(4):275-78. DOI: 10.4103/ 0019-5154.97665.
17. Shrestha S, JhaAK, Thapa DP, Bhattarai CK. Seasonal variation of common skin diseases in pediatric age group a retrospective study conducted in a medical college of Nepal. Journal ofUniversal College of Medical Sciences. 2014;2(5):7-11. DOI: 10.3126/jucms.v2i1. 10483.