Spectrum of Pediatric dermatoses in tertiary care center in Nepal

R Shrestha,[1] D Shrestha,[2] AK Dhakal,[2] A Shakya,[2] SC Shah[2] and H Shakya[2]

[1]Department of Dermatology, [2]Department of Pediatrics KIST Medical College, Lalitpur, Nepal

Corresponding author: Dr. Rima Shrestha, Department of Dermatology, KIST Medical College, Lalitpur, Nepal; e-mail: rimashrestha00@yahoo.com

ABSTRACT

Children with dermatological problems constitute a major group presenting to the Outpatient Department. This study was done to see the pattern of skin disorder among the pediatric age group in a tertiary care center in Nepal. To determine the pattern of skin disorders among children visiting the Department of Dermatology and Pediatrics in a tertiary care center in Nepal. All the patients visiting the Dermatological Out patient Department in the age group 0-14 years were enrolled in the study during the time period of 3 years (2009-2011). The cases were diagnosed based on the detailed clinical history and clinical examination, and the patients were investigated as needed. A total of 1086 (22.64%) patients out of 4795 patients were having skin disorder and among them 584 (53.77%) were males and 502 (46.23%) were females.The age range was 0-14 with the mean age of 7 years. Dermatitis and eczema were the most frequently encountered disease 298 (26.46%), followed by bacterial infections 156(16.13%), urticarial 190 (15.71%), viral infection (14.12%), fungal infection 76 (7.3%), scabies 54 (5.03%), miliaria 25 (2.75%), vitiligo 27 (2%) and others 87 (6.53%). Nutritional disorders, vascular, pigmentary, nevi, drug eruptions had a comparatively low incidence.

Keywords: Dermatoses, children, impetigo, eczema.

INTRODUCTION

Pediatric dermatology is a separate entity in the developed nations. Skin diseases are among the most frequent diseases of school children in many developing countries. Skin diseases in the pediatric age group can be transitory or chronic and recurrent. The chronic dermatoses are associated with significant morbidity and psychological impact. Dermatological problems constitute at least 30% of all outpatient visits to a pediatrician and 30% of all visits to a dermatologist involve children.[1,2]

The prevalence of skin diseases amongst children in western Nepal was 13.46%.[3] Pediatric dermatoses requires a separate view from adult dermatoses as there are important differences in clinical presentation, treatment and prognosis. The school environment makes children vulnerable to cross transmission of communicable skin diseasesamong themselves and their families.

Cutaneous infections are common in children during school going years. Most of the cutaneous diseases which result from intrinsic genetic abnormalities also have onset in the pediatric age-group.

We undertook this study to determine the extent and pattern of common dermatoses in children presenting to a tertiary care center in Nepal.

MATERIALS AND METHODS

This study was conducted in Departments of Dermatology and Pediatrics at our Institute, The climate of this region is typical of a tropical area with high temperature and humidity. All children, 14 years and below, attendingthe dermatology out-patient department with any dermatoses from January 2009 to December 2011 were enrolled in the study. The diagnosis was made by a dermatologist based on detailed history, clinical features and appropriate investigations such as KOH examination, Tzanck test, Gram's stained smear, hematological and biochemical investigations, skiagrams, VDRL test, skin biopsy *etc*. The diseases were tabulated based on the etiology and results were analyzed.

RESULTS

Out of 4795 patients, a total of 1086(22.64%) patients belonged to the pediatric age group of 0-14 years. Among them 584 (53.77%) were males and 502 (46.23%) were females. The age range was 0-14 with the mean age of 7 year. 1086 children had only one dermatosis while 20 children had more than one dermatosis. 196 (20.33%) of the children belonged to age <1 years, 298 (27.9%) of the children belong to the age group of 1-4 years, 371 (35.06%) children belong to the age group of 5-9 years, and 221 (16.76%) of the children belong to the age group of 10-14 years (Fig. 1).

Spectrum of Dermatosis: Dermatitis and eczema were the most frequently encountered disease in 298 (26.46%), followed by urticarial 190 (17.33%), bacterial infections 156 (16.13%), viral infections

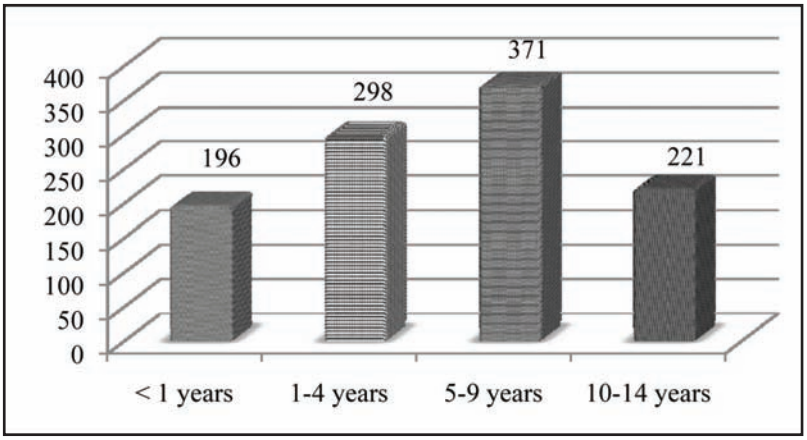

Fig. 1. Patient distribution according to age group

131 (14.12%), fungal infections 76 (7.3%), scabies 54 (5.03%), miliaria 25(2.75%), vitiligo 27 (2%) and others 87 (6.53%). Nutritional disorders, vascular, pigmentary, nevi, drug eruptions had a comparatively low incidence (Fig. 2).

In Dermatitis and Eczema, eczema was encountered in 136, pityriasis alba in 33, seborrheic dermatitis in 48, allergic contact dermatitis in 18, irritant contact dermatitis in 10, nummular eczema in 5, photoeczema in 5, dyshydrotic eczema in 17, atopic dermatitis in 10, and phytodermatitis in 16 children.

The second most common dermatosis was papular urticarial seen in 131, acute urticarial was seen in 45,chronic urticarial in 5, and urticarial associated with angioedema in 5 children.

Among bacterial infection (156), impetigo was commonest seen in 145 children, followed by abscess in 8 and cellulitis in 3 children. In viral infection 131, varicella was the most frequently encountered in 56 children, then was viral exanthema in 28, warts in 20, measles in 11, molluscum contagiosum in 11, herpes simplex in 5 children.

In 76 patients with dermatophytosis, tineasis was seen in 47 children, candidiasis in 16, pityriasis versicolor in 13. In other dermatosis, miliaria was seen in 25,vitiligo was seen in 27, nevi in 10, pigmentary dermatosis in 8, nutritional in 10, vascular in 9, drug eruption in 7 children was seen.

The disorders listed in the others category include perniosis (5), keloid (5), xerosis (8), glossitis (1), Lichen planus (5), pitted keratolysis(1), ichthyosis vulgaris (7), lamellar exfoliation (2), meningioma (1), acne (10), psoriasis (2), alopecia areata (94), prurigo nodularis (1), sebaceous cyst (2), keratoderma (4), telogen effluvium (1), dermatitis herpetiformis (1), pityriasis rosea(2), keratosis pilaris (7), sunburn (2), SLE (1) and undiagnosed(13).

DISCUSSION

The pattern of skin diseases in children is very much influenced by climate, external environment, dietary habits and socio economic status.The present study brings into focus the pattern of pediatric dermatoses encountered in a referral center in tertiary hospital in Kathmandu.

The most common dermatosis was eczemas and dermatitis which accounted for 298 (26.46%), which was similar to when compared with western studies where they ranged from 18% to 34%.[4-6] Likewise, Wisuthsarewong and Viravanin their work on 2,361 Thai children found a greater prevalence of eczematous dermatoses (41.2%) followed by cutaneous infections (21.9%).[7]

Another interesting observation was the rarity of atopic dermatitis in our study population. We had only 10 cases of atopic dermatitis, which accounted for (0.2%) of the total children. In contrast, studies from developed countries reported a higher incidence ranging from 3.1% to28%.[8] This low frequency of atopy may be related to the dietary habits and climate.

Urticaria was the second commonest skin disease encountered in 190 (17.33%) out of which papular urticarial was seen in 110 patients. Insect bite reaction (papular urticaria) contributed to 190 (10.12%) of the study population. Ghosh *et al* observed a lower frequency of 4% in their study.[9] Such high frequency of papular urticaria can be explained by the fact that most of these children are from rural or semi urban areas and wear scanty clothing due to climatic conditions and thus being exposed to insect bites.

The third most common dermatosis was bacterial infections in 156 (16.13%) of the study population. Negi *et al* in their study found that infections and infestations contributed to 50% of their cases in Garhwal region of Uttar Pradesh.[10] Various other authors have reported them occurring in the range of 35.6% to 85.2%.[11-12]

In all these studies, whether institution based or community based, the infections and infestations were the main group of dermatoses. The higher frequency of infections and infestations in our study could possibly be due to large rural population attending our hospital belonging to low socio-economic strata. Impetigo was the most common infection among bacterial infection in our study and comprised (145) 92.9% of infections and infestations. In a study conducted in rural Pakistan, pyoderma was the most common disorder in the children.[13] The presence or absence of biting flies is

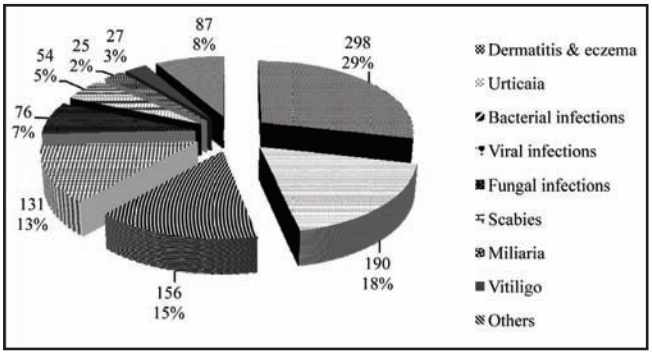

Fig. 2. Patient distribution according to the dermatosis type

important in the amount of pyoderma, for the irritation and subsequent infection of insect bites appeared to underlie the largest number of cases. Pfützner affirmed that among the bacterial infections, impetigo was one of the most frequent,[14] which is in agreement with the findings described in the present article.

Among viral infections, varicella was the most common seen in 56 children and in fungal infection, tineasis was the most common seen in 47 children. Onychomycoses were not registered, and these data are in agreement with the literature, since the prevalence of this disease in children is substantially lower than in adults.[15] In parasitic infestation scabies was seen in 54 children.

Dermatoses are a wide-spread health problem among children though not responsible for mortalities but for morbidities. It has been neglected both by the community and health personnel. Skin of the child is more prone to develop skin diseases.

Cutaneous complaints contribute about one-third of all consultations in pediatric office.This reflects the obvious need for dermatologic education of pediatricians. Therefore it seems necessary to ensure that the training of pediatric dermatologists and pediatricians focus on accurate recognition, diagnosis, and management of these common skin diseases. The pattern of skin lesions observed in a study of a pediatric clinic differed substantially from those reported from pediatric dermatology clinics.[16] As might be expected, the dermatology subspecialty clinic had a higher frequency of visits by children with chronic and unusual skin disorders, where as many common entities (such as diaper rash or miliaria) were rarely encountered. Furthermore, our survey was hospital based retrospective study with known limitations. We believe that the pattern observed represents a rough estimate of the pattern of pediatric skin diseases in dermatology clinics in Kathmandu.

More studies with multicenter approach are required to find the dimension of the problem. The parents and the children should be taught the hygienic practices along with proper hydration to be free from skin diseases.

REFERENCES

1. Thappa DM. Common skin problems in children. *Indian J Pediatr* 2002; 69: 701-6.
2. Federman DG, Reid MC, Feldman SR, Greenhoe J, Kirsner RS. The primary care provider and the care of skin disease. *Arch Dermatol* 2001; 137: 25-9.
3. Kumar A, Mishra A, Devkota S *et al*. Pattern of pediatric skin disorders in tertiary care center in western Nepal. *Nepal J Dermatol Venereol Leprol* 2010; 10: 37-9.
4. Horn R. The pattern of skin diseases in general practice. *Dermatol Pract* 1986; 2: 14-9.
5. Johnson MLT, Roberts J. Prevalence of dermatological disease among person 1-74 years of age. Washington DC: US Department of health and education, National center for health statistics 1978; PHS 79: 1660.
6. Bowker NC, Cross KW, Fairburn EA, Wall M. Sociological implications of an epidemiological study of eczema in the city of Birmingham. *Brit J Dermatol* 1976; 95: 137-44.
7. Wisuthsarewong W, Viravan S. Analysis of skin diseases in a referral pediatric dermatology clinic in Thailand. *J Med Assoc Thai* 2000; 83: 999-100.
8. Foley P, Zuo Y, Plunkett A, Marks R. The frequency of common dermatoses in preschool children in Australia. Atopic dermatitis. *Arch Dermatol* 2001; 137: 298-300.
9. Ghosh SK, Saha DK, Roy AK. A clinicoaetiological study of dermatoses in pediatric age group. *Indian J Dermatol* 1995; 40: 29-31.
10. Negi KS, Kandpal SD, Prasad D. Pattern of skin diseases in children in Garhwal region of Uttar Pradesh. *Indian Pediatr* 2001; 38: 77-80.
11. Sharma RC, Mendiratta RC. Clinical profile of cutaneous infections and infestations in pediatric age group. *Indian J Dermatol* 1999; 44: 174-8.
12. Bhatia V. Extent and pattern of pediatric dermatoses in central India. *Indian J Dermatol Venereol Lepro1* 1997; 63: 22-5.
13. Porter MJ, Mack RW, Chaudhary MA. Pediatric skin disease in Pakistan. A Study of three Punjab villages. *Int'l J Dermatol* 1984; 23: 613-7.
14. Pfützner W. Infectious skin disease in childhood-1: bacteria and fungi. *MMW Fortschr Med* 2002; 144: 24-8.
15. Gupta AK, Chang P, Del Rosso JQ *et al*. Onychomycosis in children: prevalence and management. *Pediatr Dermatol* 1998; 15: 464-71.
16. Schachner L, Ling NS, Press S. A statistical analysis of a pediatric dermatology clinic. *Pediatr Dermatol* 1983; 1: 157-64.