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ORIGINAL RESEARCH ARTICLE

CLINICAL SPECTRUM OF PEDIATRIC DERMATOSES IN PATIENTS ATTENDING A TERTIARY CARE CENTER IN CENTRAL NEPAL

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ABSTRACT

Background: Skin diseases are common health problem in children all over the world. However, there is scarcity of epidemiological studies on pediatric dermatoses in Nepal. This study was done to identify the pattern and age variations of pediatric dermatoses in a tertiary care centre in central Nepal.

Methods: All children 18 years and below with skin disease attending dermatology OPD between the period of June 15, 2019 to December 15, 2019 were included in the study. SPSS 20 was used for statistical analysis with which descriptive statistics was done.

Results: A total of 2789 patients (60.1% male and 39.9% female) with 2895 diagnoses were recorded during this period. The most common dermatoses were infections and infestations (62.8%) followed by eczema (12.1%), acne (7.5%) and urticaria (4.8%). Pigmentary disorder constituted 2.6%. Insect bite reaction was seen in 2.6%, miliaria 2 %, papulosquamous disorders 1.5% followed by disorders of hairs and nails 0.9%.

Conclusions: This study revealed the most prevalent skin diseases in children in specialized dermatology clinic in a developing country such as Nepal. Fungal infection was commonest disease in adolescent and school age children whereas bacterial infection was commonest in infants, toddler and preschool children. Acne was predominantly seen in adolescent.

INTRODUCTION

Skin diseases are important component of any primary care practice that includes children. Skin diseases are common world wide but their distribution of types and frequencies may vary according to geographical areas. Studies have reported that infections and infestations are common in developing countries whereas eczema and skin cancers are more common in developed countries owing to their particular skin type. Prevalence of skin diseases in children depends on socioeconomic status, climate, hygiene. There are more than 3000 known diseases of the skin.[1] It can be transitory to chronic and recurrent. Transitory skin diseases like infections are easily treated and preventable with simple hygiene measures. Chronic and incurable skin diseases like eczema, psoriasis and vitiligo are the important cause of morbidity and impairs quality of life in children.

Prevalence of skin disease in general population vary from 6.56% to 11.16% in various studies.[2-4] Skin diseases constitute 20% to 30% of all outpatient visit to a pediatrician and 30% of all visits to dermatologists are patients of pediatric age group.[5] Despite this relatively little attention is given in national health policies and little is known about the impact of pediatric skin disease on health care systems in developing countries like Nepal. This study was aimed to determine pattern and age variation of skin diseases in representative pediatric population in a tertiary care centre.

METHODS

This was a retrospective study conducted from June 15, 2019 to December 15, 2019 in the Department of Dermatology, Chitwan Medical College, Chitwan, Nepal. Data was taken from medical records. Two thousand seven hundred and eighty-nine children were enrolled in the study. Convenient sampling method was used to select children to be enrolled in the study. All children with age 18 years and below with clinical evidence of skin disease were included in the study. The patient who came for follow-up were excluded from the study. Ethical clearance for the study was obtained (CMC-IRC/077/078-083). SPSS 20 was used for statistical analysis with which descriptive statistics was done.

RESULTS

In this study 2789 patients of age 18 and below were included. A total of 2895 diagnoses were made in 2789 children. Of them, 1112(39.9%) were female and 1677(60.1%) were male.

Most children were adolescent (55.36%) (Table 1).

Table 1: Demographic profile of study patients

Age	Boys (%)	Girls (%)	Total (%)
Neonates (Birth to 28days)	5(0.17)	5(0.17)	10(0.35)
Infants (1 mon to 1 yr)	71(2.54)	89(3.19)	160(5.73)
Toddler (1yrs to 3yrs)	96(3.44)	153(5.48)	249(8.92)
Preschool (3yrs to 5yrs)	63(2.25)	108(3.87)	171(6.13)
School age (5yrs to 11yrs)	244(8.74)	411(14.73)	655(23.48)
Adolescents (11yrs to 18yrs)	633(22.69)	911(32.66)	1544(55.36)

Table 2: Distribution of etiology of various dermatoses in children

Disease	Female	Male	Number (%)
Infections and infestations	634	1184	1818(62.8)
Eczema	163	189	352(12.1)
Acne	119	98	217(7.5)
Urticaria	66	74	140(4.8)
Pigmentary disorders	42	34	76(2.6)
Papular urticaria	30	45	75(2.6)
Miliaria	26	33	59(2.0)
Papulosquamous disorders	19	24	4391.5)
Disorders of Hairs and nail	10	15	25(0.9)
Hemangioma	3	3	6(0.2)
Connective tissue disease	4	1	5(0.2)
Genetic disorders	0	2	2(0.1)
Others	44	33	77(2.6)
Total	1160	1735	2895(100)

The three most common dermatoses were infections and infestations (62.8%), eczema (12.1%) and acne (7.5%) (Table 2).

Table 3: Pattern of infections and infestations

Disease	Number (%)
Bacterial infections	
Impetigo	185(6.57)
Furunculosis	68(2.41)
Folliculitis	60(2.13)
Secondary pyoderma	79(2.8)
Acute paronychia	8(0.28)
Abscess	5(0.17)
Blistering distal dactylitis	4(0.14)
Cellulitis	2(0.07)
Leprosy	2(0.07)
Fungal infections	
Dermatophytic infections	640(22.73)
Pityriasis versicolor	169(6)
Candidiasis	29(1.03)
Parasitic infections	
Scabies	285(10.12)
Pediculosis	6(0.21)
Viral infections	
Warts	91(3.23)
Varicella	81(2.87)
HFMD	39(1.38)
Molluscum contagiosum	31(1.1)
Herpes zoster	11(0.39)
Viral exanthem	11(0.39)
Herpes labialis	10(0.35)

Most common infection was fungal infection (30.04%). Dermatophytic infection (22.73%) was commonest among fungal infections. Impetigo (6.57%) was most common among bacterial infections (14.80%) and scabies (10.12) was most common among parasitic infections (10.43%). Leprosy was seen in two patients. Verruca vulgaris (3.23%) was the most common viral infection followed by varicella (2.87%) and Hand foot and mouth disease (HFMD). The pattern of infections and infestations are shown in Table 3.

Eczema was seen in 12.1% of children. Seborrhoeic dermatitis (3.01%) was the most common presentation of eczematous dermatitis followed by irritant contact dermatitis (2.16%). Atopic dermatitis was seen in 25 (0.88%) children. Highest proportion of eczema was seen in infants in which Seborrhoeic dermatitis was the commonest. Pattern of eczema is shown in Table 4 and distribution of common dermatoses according to age group in Table 5.

Table 4: Pattern of eczema

Eczema	Number (%)
Seborrhoeic dermatitis	85(3.01)
Irritant contact dermatitis	61(2.16)
Pompholyx	47(1.66)
Allergic contact dermatitis	45(1.59)
Nummular eczema	40(1.42)
Atopic dermatitis	25(0.88)
Pityriasis alba	36(1.27)
Lichen simplex chronicus	5(0.17)
Prurigo nodularis	3(0.1)
Juvenile plantar dermatosis	3(0.1)
Asteatotic eczema	2(0.07)
Total	352(12.61)

Table 5: Distribution of common dermatoses according to age group

Dermatoses	Neonates	Infants	Toddler	Preschool	School age	Adolescent	Total(%)
Fungal infection	1(10)	16(10)	31(12.4)	28(16.4)	145(22.1)	618(40.3)	839(28.9)
Bacterial infection	4(40)	48(30)	75(30.1)	55(32.2)	104(15.9)	127(8.2)	413(14.3)
Viral infection	0	15(9.4)	42(16.9)	17(9.9)	96(14.6)	104(6.8)	274(9.5)
Parasitic infection	0	22(13.7)	34(13.6)	27(15.8)	79(12.1)	130(8.4)	292(10.1)
Eczema	1(10)	35(21.9)	26(10.4)	19(11.1)	101(15.9)	170(11.0)	352(12.1)
Acne	0	0	0	0	9(1.4)	208(13.4)	217(7.5)
Urticaria	0	11(6.8)	19(7.6)	8(4.7)	38(5.8)	64(4.1)	140(4.8)
Pigmentary disorders	0	1(0.6)	8(3.2)	1(0.6)	26(3.9)	40(2.6)	76(2.6)
Papulosquamous	0	1(0.62)	1(0.4)	3(1.7)	14(2.1)	24(1.5)	43(1.5)
Others	4(40)	11(6.8)	13(5.2)	13(7.6)	40(6.1)	168(10.8)	249(8.6)
Total	10	160	249	171	655	1553	2895

Fungal infection was commonest disease in adolescent and school age children whereas bacterial infection was commonest in infants, toddler and preschool children. Acne was predominantly seen in adolescent. Highest proportion of eczema was seen in infants.

Vitiligo (1.5%) was the commonest pigmentary disorder seen. Pityriasis rosea was the most common papulosquamous disorder followed by lichen planus and psoriasis. Alopecia areata was the most common type of alopecia observed.

Hemangioma was the most common benign skin tumor. Systemic lupus erythematosus was the most documented connective tissue disorder. In genodermatoses icthyosis vulgaris and xeroderma pigmentosum was seen in one patient each.

DISCUSSION

In our study infectious dermatoses (62.8%) were most common followed by eczema (12.1%). Similar results were seen in a study done in western region of Nepal by Yogesh et al.[6] In a similar study done by Shrestha et al,[7] which was conducted in hilly region of Nepal, eczema was the commonest dermatoses. In various studies done in Asian and African coutries, infections and infestations were most common skin diseases whereas eczema was most common in western countries.[8-12] This indicates infectious dermatoses are more common in hot and humid climate and in countries with poor hygiene and low socioeconomic status. Various studies show that lower outdoor temperature contribute to worsening of eczema which might be the reason it is more common in areas with higher altitudes.[13-15] In our study superficial fungal infections were seen in 30.04% children. In another study done in western region of Nepal, fungal infection was seen in 18.5% of children.[6] In a study done in Nigeria, fungal infections were the seen in 16.3% children.[10] Superficial fungal infections are important public health problem worldwide. They are found to affect 20% to 25% of worlds population and the incidence continue to increase.[16]

Acne affects approximately 85% of adolescents.[17] It was the third most common dermatoses in our study. Acne was the most prevalent dermatoses after fungal infection in adolescents. Acne was significantly more prevalent in girls than in boys. Similar results were reported by Park et al and Dreno.[18, 19] This may be because girls are aesthetically more concerned than boys and seek treatment. Various studies on schoolchildren have shown that females have an earlier onset of acne vulgaris than males which may contribute to higher prevalence of acne in females.[20]

The worldwide lifetime incidence of urticaria is estimated to be higher than 20%. [21]The incidence in children is about 2.1–6.7% for all subtypes. [21] In our study current urticaria was seen in 4.8% children. There was no statistically significant difference in prevalence in boys and girls. Similar results were seen in a study done in Korea.[22] However in adults several studies have reported higher prevalence of urticaria in women.[23] It might be due to autoimmune mechanism in chronic urticaria which is more frequent in women.

Papular urticaria is a chronic inflammatory disease caused by bites of arthropods like fleas and mosquitoes. It is more prevalent in tropical areas where the insects and arthopods are abundant. In our study papular urticaria was seen in 2.6% children which is similar to that reported by Yogesh et al.[6] In a study done in India by Karthikeyan et al the prevalence of papular urticaria was 5.3%.[9]

Vitiligo affects approximately 1% of global population.[24] In our study vitiligo was seen in 1.5% of children. In another study done in Nepal it was seen in 2% of children.[7] World wide epidemiological data on childhood vitiligo are scarce. The prevalence of childhood vitiligo in India is 0.46-8.88%.[25] In our study pigmentary disorders were more common in females. Similar results for vitiligo were reported by Handa et al.[25] Due to social stigma in South Asian countries, females tend to notice and seek treatment for pigmentary disorders earlier than males. Vitiligo also has psychosocial impact in children.[26]
A major limitation of this study is that being a hospital-based study, the results of our study may not fully represent the prevalence of pediatric skin diseases in the general population. For this, a larger community-based study is recommended in future.

CONCLUSION

Majority of the study population belonged to adolescent age group. Infections and infestations, eczema and acne were three common dermatoses seen in children. Dermatophytic

infection was the most common infection. Cosmetically significant dermatoses acne and pigmentary skin diseases were more common in females. This study identifies the pattern of pediatric dermatoses in central region of Nepal and may help in formulating preventive measures, health education and disease control strategies.

CONFLICT OF INTEREST: None

FINANCIAL DISCLOSURE: None

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