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Original Research Article

Prevalence of non-infectious dermatoses in patients attending a tertiary care center in Rajasthan

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ABSTRACT

Background: Pediatric dermatoses require a separate view from adult dermatoses as there are important differences in clinical presentation, treatment and prognosis. There is very little epidemiological study available on non-infectious childhood dermatoses in India. The aims of the study were to find the prevalence, clinical profile and various etiological factors associated with childhood non-infectious dermatoses and to determine the prevalence of most common non-infectious childhood dermatoses.
Methods: This cross-sectional observational study conducted at tertiary care centre in Rajasthan, India. Children with age 13 years and below with clinical evidence of cutaneous disorders were studied. Parents who have not given consent for the study, acutely ill children, Children having infectious dermatoses (bacterial, fungal, viral, arthropods, parasitic and protozoal infection) were excluded from the study.
Results: A total of 232 cases were studied which showed a female preponderance of 55.60%. Most of the skin diseases were seen in the 5 to 13 years (school children) age group. The most common dermatoses was eczematous (36.63%), among eczema atopic diathesis was the commonest (17;20%) followed by hypersensitivity dermatoses (21.12%), genetic disorders (13.36%), disorders of genetic disorders (7.4%), sweat gland disorders (8.18%), pigmentary disorders (4.31%), papulo squamous disorders (4.74%), Nevi (6.46%).
Conclusions: Eczematous dermatoses were the most commonly noted in the study, followed by hypersensitivity dermatoses. Atopic diathesis was the commonest endogenous eczemas. Acne, insect bite reaction and miliaria were the other common dermatoses. There was no significant association of various dermatoses with systemic diseases in the study.

Keywords: Non-infectious, Dermatoses, Eczematous, Childhood

INTRODUCTION

Skin diseases are a major health issue in the pediatric age group and are associated with significant morbidity. The pattern of skin disease is a consequence of malnutrition, poverty, overcrowding, poor hygiene, illiteracy and social backwardness in many parts of India. Skin diseases comprises around 30% of all outpatient department visit to a pediatrician and dermatologist.[1,2] In a school-based surveys the prevalence of pediatric dermatoses in various parts of India has ranged from 8.7% to 35%.[3] Identification of skin disease in this age-group by a trained dermatologist is very important. A hospital-based study revealed that examination by a dermatologist has altered the diagnosis and/or treatment in 8% of patients.[4] Skin diseases in the pediatric age group can be transitory

or chronic and recurrent. Cutaneous infections are common in school going children. Non-infectious pediatric dermatosis requires a separate view from other dermatoses as there are important differences in clinical presentation, treatment and prognosis. The chronic non-infectious dermatoses are associated with significant morbidity, psychological impact and affect their quality of life. Childhood dermatoses are more influenced by their socioeconomic status, climatic exposure, dietary habits and external environment. Cutaneous infections are common in children during school going age. Most of the cutaneous diseases are associated with genetic abnormalities and also have onset in the pediatric age-group.

METHODS

In this cross-sectional observational study comprised 232 patients who attended the dermatology outpatient department of Pacific medical college & hospital, Udaipur from August 2017 to August 2018 were included prospectively in this single contact study. Children with age 13 years and below with clinical evidence of cutaneous disorders were included. And parents who have not given consent for the study, acutely ill children, Children having infectious dermatoses (bacterial, fungal, viral, arthropods, parasitic and protozoal infection) were excluded from the study.

A detailed history of the patient was recorded by using semi-structured performa which include nature of illness, onset, morphology, distribution. Relevant family history, Seasonal variation, consanguinity documented, Thorough clinical and general physical exanimation were made. Relevant investigations were done and clinical photographs were taken as required. And data analysis was done by using SPSS 17.0 version (SPSS Inc., Chicago, IL).

RESULTS

A total 232 patients were identified from the cases that had attended the dermatology OPD of our institution between August 2017 to August 2018, of which 107 (44.40%) were male and 129 (55.60%) were females patients (Table 1). Most of the skin diseases were seen in the 5 to 13 years (school children) age group (132; 56.90%), followed by preschool children and infants.

In our study the majority of dermatoses belonged to Eczematous (85; 36.63%) dermatosis. This was found in 34 (14.65%) males and 51 (21.98%) females. Among eczema, atopic diathesis was the commonest (17;20%) followed by seborrhoeic dermatitis (16;18.82%) and pityriasis alba (12;14%) (Table 2).

Hypersensitivity dermatoses were found in 24 (48.98%) males and 25 (51.02%) females. Among the hypersensitivity disorders, papular urticaria (31; 63.26%) formed the largest group followed by chronic urticaria (16; 32.65%). In papular urticaria no significant seasonal variation observed. Angioedema were noted in 2 patients. (Table 3).

Acne was found in 7 (3.01%) males and 5 (2.15%) female patients. Out of 7 males a neonatal acne case is noted. Maximum number of acne patients found in the age group of 5-13 years.

Pigmentary disorders were recorded in 10 patients, among those 4 (1.72%) males and 6 (2.58%) females. Vitiligo 7 (70%) was commonest, followed by post inflammatory hypopigmentation & hyperpigmentation, freckles, ashy dermatosis.

Table 1: Distributrion pattern of non-infectious dermatoses (n=232).

Sl. No	Conditions	Male	%	Female	%
1	Physiological	0	0	2	0.86
2	Eczematous	34	14.65	51	21.98
3	Pigmentary	4	1.72	6	2.58
4	Papulosquamous	6	2.58	5	2.15
5	Bullous dermatoses	1	0.43	0	0
6	Vasculitis	0	0	1	0.43
7	Hypersensitivity	24	10.34	25	10.77
8	Acne	7	3.01	5	2.15
9	Sweat gland disorders	9	3.87	10	4.31
10	Genetic disorders	15	6.46	16	6.90
11	Hair and scalp disorders	2	0.86	4	1.72
12	Metabolic disorders	0	0	2	0.86
13	Collagen vascular disorders	1	0.43	1	0.43
14	Drug eruptions	0	0	1	0.43
	Total	103	44.40	129	55.60

Table 2: Distribution pattern of eczematous disorder (n=85; 36.63%).

Sl. No	Conditions	Male	%	Female	%
Endogenous n=68 (80%)					
1	Atopic dermatitis	2	2.35	3	3.52
2	Atopic diathesis	8	9.41	9	10.58
3	Seborrhoeic dermatitis	6	7.05	10	11.76
4	Pityriasis alba	3	3.52	9	10.58
5	Nummular dermatitis	1	1.17	3	3.52
6	Pompholyx	2	2.35	5	5.88
7	Juvenile plantar dermatosis	3	3.52	2	2.35
8	Lichen striatus	1	1.17	1	1.17
Exogenous n=17 (20%)					
1	Contact dermatitis	3	3.52	2	2.35
2	Infective dermatosis	1	1.17	1	1.17
3	Paederus dermatitis	2	2.35	3	3.52
4	Polymorphic light eruption	2	2.35	3	3.52
	Total	34	40	51	60

Table 3: Distribution pattern of hypersensitivity disorders (n=49; 21.12%).

Sl. No	Conditions	Male	%	Female	%
1	Chronic urticaria	7	14.28	9	18.36
2	Angioedema	0	0	2	4.08
3	Papular urticaria	17	34.69	14	28.57

Table 4: Distribution pattern genetic disorders (n=31).

Sl. No	Conditions	Male	%	Female	%
1	Albinism	0	0	1	3.23
2	Piebaldism	2	6.45	1	3.23
3	Freckles	0	0	1	3.23
4	Aplasia cutis	0	0	1	3.23
5	Tuberous sclerosis	1	3.23	0	0
6	Nevus	8	25.81	7	22.58
7	Icthyosis	2	6.45	4	12.90
8	Keratoderma	2	6.45	1	3.23
	Total	15	48.39	16	51.61

Papulosquamous disorders were documented in 11 (4.74%) patients. Plaque psoriasis and lichen planus were more common. Followed by, lichen nitidus, para psoriasis, phrynoderma are observed. Among that one case of segmental lichen planus observed. Ichthyosis observed in 6 patients among that ichthyosis vulgaris were noted in 4 patients and 2 patients of lamellar ichthyosis were recorded. Palmoplantar keratoderma recorded in 3 patients. Among that one patient was autosomal dominant, diffuse transgredient palmoplanter keratoderma was documented.

Nevus is observed in 15 patients. 8 were males and 7 were female patients. Among nevi, epidermal nevus (5) and backer's nevus (4) were commonest. Followed by nevus depigmentosus, nevus of ota, sebaceous nevus, melanocytic nevi.

Sweet gland disorders were recorded in 19 (8.18%) patient, among that 9 males and 10 females patients. miliaria 15 (78.94%) was frequently observed and mostly in summer seasons. Among genetic disorders nevus (15) was commonest. Followed by icthyosis, keratoderma, albinism, piebaldism, tuberus sclerosis, aplasia cutis (Table 4).

One case of each childhood bullous dermatosis, fixed drug eruption, morphea, perforating dermatosis, Henoch-Schonlein purpura was recorded. In physiological conditions, erythema neonatorum, mongolian spot were documented. Also 2 cases of Acanthosis nigricans were documented.

DISCUSSION

Skin diseases are a major health problem in the paediatric age group and are associated with significant morbidity.

The pattern of skin diseases in paediatric age group vary from one country to another and within the same country from one state to another due to various climatic, cultural and socio-economic factors.

Various epidemiological studies have been undertaken across the world including India to study the pattern of paediatric dermatoses. The epidemiological data in Indian studies is based on the pattern of paediatric dermatoses in school going children in both urban and rural areas and in tertiary care hospitals. Several studies in paediatric age group have been undertaken across the World. Majority of them have shown atopic dermatitis as the most common dermatoses.

Most of the skin diseases were seen in the 5 to 13 years (school children) age group (132; 56.90%), followed by preschool children and infants. Whereas a study from a paediatric hospital in Delhi, a referral centre of north India compared the pattern of dermatoses in different age groups within the paediatric population has documented that most of the skin diseases were seen in the 1- to 5-years age group 44 (94%), followed by school children 29 (60%) and infants 25 (46%).[5]

In our study the majority of dermatoses belonged to Eczematous (85; 36.63%) dermatosis. This was found in 34 (14.65%) males and 51 (21.98%) females. Among eczema atopic diathesis was the commonest 17 (20%) followed by seborrhoeic dermatitis 16 (18.82%) and pityriasis alba 12 (14%), This finding is similar to other studies.[6] However, Hayden documented diaper dermatitis (16%) to be more common followed by atopic dermatitis (9%) and seborrhoeic dermatitis (6%), while Sardana et al, found infantile seborrhoeic dermatitis 10 (10.49%) to be more common compared to pityriasis alba (5.85%) and atopic dermatitis (5.27%).[5,7]

Atopic dermatitis documented more in winter season. Others endogenous eczematous dermatoses noted were atopic dermatitis, nummular dermatosis, pompholyx, juvenile planter dermatosis, lichen striatus. In exogenous 17 (20%) eczematous dermatoses, contact dermatitis, infective dermatitis, blister beetle dermatitis, polymorphic light eruptions were noted similar to other studies. The incidence of eczemas primarily depends upon genetic constitution, individual predisposition, and environmental threats/allergens.

Hypersensitivity dermatoses were found in 24 (48.98%) males and 25 (51.02%) females. Among the hypersensitivity disorders, papular urticaria 31 (63.26%) formed the largest group followed by chronic urticaria 16 (32.65%). Sayal et al and Sardana et al also noticed a frequent occurrence of papular urticaria compared to urticaria.[7,8] In papular urticaria no significant seasonal variation observed. Angioedema were noted in 2 patients and day-care management was done.

Acne was found in 7 (3.01%) males and 5 (2.15%) female patients. Out of 7 males a neonatal acne case is noted. Maximum number of acne patients found in the age group of 5-13 years, similar study has been reported by Gul et al from Turkey.[9] However other Indian study did not report any significant number of acne cases.

Pigmentary disorders constituted 4.31% of total dermatoses in our study. Vitiligo 7 (70%) was commonest, followed by post inflammatory hypopigmentation & hyperpigmentation, freckles, ashy dermatosis. Sacchidanand et al reported that pigmentary disorders constituted 5.81% and Karthikeyan et al reported 5.7%.[10,11]

Genetic disorders constituted in 31 of total dermatoses in this study. Epidermal nevus was the most common nevoid and developmental disorder in our study. Thappa in their study observed a prevalence of 0.5%.[1] Dogra and Kumar observed a prevalence of 1.1%.[13]

Sweat disorders constituted 19 (8.18%) of dermatoses during this study period. Miliaria (15) was most commonly observed and mostly in summer seasons. In the study done by Karthikeyan et al the prevalence of miliaria was 4.1%.[11] Tamer et al showed 12.4% prevalence while Rajar et al reported a prevalence of 26% in the age group of 11–15 years.[14,15]

Other dermatoses included childhood bullous dermatosis, fixed drug eruption, morphea, perforating dermatosis, Henoch-Schonlein purpura, erythema neonatorum, mongolian spot, acanthosis nigricans were documented and this low prevalence is attributed to the cross sectional nature of our study.

Interestingly, there was no case of acrodermatitis enteropathica, hemangioma found in our study. A higher incidence (3.6%) of acrodermatitis enteropathica has also been reported in a study from Karachi by Javed et al.[12]

CONCLUSION

Non-infectious paediatric dermatosis represents a special challenge to dermatologist. The pattern of skin diseases in India is different across the states, rural and urban areas. Our study has been undertaken in Udaipur which reveals eczematous dermatosis 85 (36.63%) is common. There was no significant association of various dermatoses with systemic diseases in the study. Most of the non-infectious cutaneous diseases which result from intrinsic genetic abnormalities also have onset in the paediatric age-group. The chronic dermatoses like atopic dermatitis, seborrhoeic dermatitis are associated with significant morbidity and psychosocial impaction of various dermatoses with systemic diseases in the study.

This study provides a preliminary baseline data for future clinical research. It might also help to assess the changing trends of paediatric dermatoses.

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