

A study of pattern and profile of non infectious dermatoses in paediatric age group <12 years.

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Abstract:

The aim of the study is to assess the incidence of non infectious dermatoses in children under 12 years of age; the incidence and prevalence of various physiological, genetic, papulosquamous, nutritional, autoimmune and drug induced disorders; the systemic association in various dermatoses and early identification of genetic disorder which will help in estimating the genetic risk and planning of future pregnancies. Present clinical study comprises of 1000 children less than 12 years of age in the department of Dermatology, V.S General Hospital, Ahmedabad. The study was conducted from Oct 2012 to Oct 2014. The time of occurrence, extent of involvement and the anatomical location was recorded. Relevant obstetrical history, history of any illness during pregnancy, history of drug ingestion, sibling history and parental consanguinity was noted and various skin lesions recorded. Observations were tabulated and statistically analysed. Follow up was done every 15 days. The dermatoses were classified as papulosquamous (61.0%), nevi (4.8%), genetic (4.2%), hair (9.6%), autoimmune (5.8%), drug reactions (3.1%), nutritional (2.8%), physiological (11.4%), and others (2.5%). The commonest skin manifestations observed were papulosquamous, genetic and autoimmune disorders. Better parent awareness, proper hygiene, adequate nutrition and early identification of the condition help in preventing many of these disorders.

Keywords: Dermatoses, Non infectious, Paediatric.

Introduction:

The skin is more than just a pretty wrapper. It serves as a critical barrier to infection and dehydration and as such it is important to keep in mind that disease or impairment of the skin's normal function can lead to significant morbidity and mortality, particularly in infants as they are more vulnerable to heat loss, dehydration and infection. Children's skin problems span nearly two decades from birth through adolescence. Childhood skin problems, which are common and present in myriad interesting ways, can distress patients and their families.



Materials and Method:

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Present clinical study comprises of 1000 children less than 12 years of age in the department of Dermatology, V.S. General Hospital, Ahmedabad. The

study was conducted from Oct 2012 to Oct 2014. The time of occurrence, extent of involvement and the anatomical location was recorded. Relevant obstetrical history, history of any illness during pregnancy, history of drug ingestion, sibling history and parental consanguinity were noted and various skin lesions recorded. Results were tabulated and statistically analysed. Follow up was done every 15 days.

Results:

The dermatoses were classified as papulosquamous (61.0%), nevi and vascular malformation (4.8%), genetic (4.2%), hair (9.6%), autoimmune (8.5%), vasculitis (3.1%), drug reactions (3.1%), nutritional (2.8%), physiological (11.4%) and others (2.5%) [Table 1].

Out of 4800 children (<12 years) attending Skin OPD of tertiary care centre from Oct 2012 to Oct 2014, a total of 1000 children of non infectious dermatoses were detected. 689 (68.9%) were males and 311 (31.1%) were females.

Table 1: Classification of Non Infectious Dermatoses in Paediatric Age Group

Etiology	Dermatoses	No. of patients	% of patients (out of 1000)
Physiological	Mongolion Spot	50	11.4
	Miliaria	31	
	Milia	12	
	Erythema Toxicum Neonatorum	11	
	Neonatal & Infantile Acne	10	
Nevi and Vascular Malformation	Nevus Depigmentosus	10	4.8
	Hemangioma	8	
	Melanocytic Nevus	5	
	Epidermal Nevus	5	
	Hypomelanosis of Ito	5	
	Salmon Patch	3	
	Portwine Stain	3	
	Becker's Nevus	2	
	Fauntail Nevus	2	
	Halo Nevus	2	
	Nevus of Ota	2	
	Angiokeratoma	1	
Genetic	Freckles	9	4.2
	Ichthyosis Vulgaris	9	
	Epidermolysis Bullosa	7	
	Lamellar Ichthyosis	5	
	Anhidrotic Ectodermal Dysplasia	4	
	Xeroderma Pigmentosa	2	
	Tuberous Sclerosis	2	
	Albinism	2	
	Bullous ichthyosiform erythroderma	1	
	Ichthyosis Hysterix	1	
Papulosquamous	Atopic dermatitis	63	27.1
	Seborrheic dermatitis	58	
	Diaper dermatitis	16	

	Allergic dermatitis	27	
	Polymorphic Light Eruption	17	
	Pityriasis Alba	40	
	Psoriasis	10	
	Lichen planus	19	
	Lichen striatus	19	
	Lichen nitidus	2	
Hypersensitivity Reaction	Papular urticaria	181	18.1
Urticaria and Angioedema	Urticaria	45	4.5
Acne	Acne	4	1.3
	Perioral dermatitis	9	
Nutritional	Phrynoderma	25	2.8
	Acrodermatitis Enteropathica	3	
Drug reactions	Drug induced urticaria	13	3.1
	Phototoxic reactions	6	
	Fixed Drug Eruption	5	
	Steven Johnson Syndrome	2	
Hair Disorders	Alopecia Areata	42	9.6
	Traction Alopecia	31	
	Telogen effluvium	10	
	Monilethrix	8	
	Trichotillomania	3	
	Lichen Planopilaris	2	
	Pseudopelade of Brocq	1	
	Folliculitis Decalvans	1	
Autoimmune	Vitiligo	44	8.5
	Pemphigus Vulgaris	4	
	Morphea	4	
	Chronic Bullous disease of Childhood	3	
	Pemphigus Foliaceous	1	
	Dermatomyositis	1	
	Systemic Lupus Erythematosus	1	
Vasculitis	Henoch Schonlein Purpura	5	0.5
Others	Keratosis Pilaris	15	2.5
	20 nail dystrophy	5	
	Xanthoma	2	
	Pityriasis Rubra Pilaris	1	
	Granuloma Annulare	1	
	Job's syndrome	1	

Papulosquamous disorder 271 (27.1%) is the most common group of dermatoses followed by hypersensitivity reaction 181 (18.1%), 114 physiological (11.4%), 96 hair & nail disorders (9.6%), autoimmune disorders 58 (5.8%), 48 nevi and vascular malformation (4.8%), urticaria 45 (4.5%), genodermatoses 42 (4.2%), drug reactions 31 (3.1%), nutritional 28 (2.8%), others 25 (2.5%) and acne 13 (1.3%) [Table 2].

Table 2: Papulosquamous Disorders

Papulosquamous Disorders	<1year	1-5 year	6-12 year	Total	Percentage (Out of 271)
Seborrhoeic dermatitis	33	10	15	73	26.93
Psoriasis	-	-	10	15	5.53
Polymorphic light eruption	-	4	13	17	6.27
Pityriasis Rosea	-	-	-	50	18.45
Pityriasis Alba	8	20	12	40	14.76
Lichen striatus	-	12	7	19	7.01
Lichen planus	-	-	19	19	7.01
Lichen nitidus	-	1	1	2	0.73
Diaper dermatitis	15	1	-	16	5.90
Atopic dermatitis	14	34	15	78	28.78
Allergic dermatitis	1	10	16	42	15.50

Psoriasis - According to present study, out of total 15 children of psoriasis, plaque psoriasis is the most common type seen in 6 (40%) followed by guttate psoriasis in 5 (33.33%) and palmoplantar psoriasis in 4 (26.66%).

Lichen planus - According to present study, out of 19 patients of lichen planus, classic lichen planus in 10 (52.63%) is the most common type followed by linear lichen planus in 6 (31.5%), lichen planopilaris in 2 (10.52%) and bullous lichen planus in 1 (5.26%). 1 patient with HIV had associated oral and nail involvement & 2 patients had hair involvement.

Pityriasis Rosea - Out of 50 cases of PR, Classical PR 40 (80%) is the most common type observed followed by inverse PR 10(20%).

Atopic dermatitis (38.41%) is common in 1-5 years of age. Seborrhoeic (35.36%) was more common in <1 year of age. Allergic dermatitis (16.46%) is more common in 6-12 years of age. Diaper dermatitis is most common in less than 1 year age group (9.76%) [Table 3].

Table 3 : Eczematous Dermatitis

Eczematous dermatitis	<1year	1-5 year	6-12 year	Total (Out of 164)	Percentage (Out of 164)
Atopic dermatitis	14	34	15	63	38.41
Seborrhoeic dermatitis	33	10	15	58	35.36
Allergic dermatitis	1	10	16	27	16.46
Diaper dermatitis	15	1	-	16	9.76
Total	63	56	46	164	100.0

We also found the prevalence of papular urticaria shooting up suddenly when the patient enters the toddler age group. This may be attributed to the exposure to external environmental factors away from the cozy protection of home as well as increased physical contact with neighbours as the baby learns to walk. Maximum cases of urticaria were in the age group 6-12 years [Table 4].

Urticaria (4.5%), acne (0.4%) and perioral dermatitis (0.9%) are common in 6-12 years of age [Table 5, 6].

Table 4: Hypersensitivity Reaction

Hypersensitivity Reaction	<1 year	1-5 year	6-12 year	Total	Percentage (Out of 1000)
Papular Urticaria	21	98	60	181	18.1

Table 5: Urticaria and Angioedema

Urticaria and Angioedema	<1 year	1-5 year	6-12 year	Total	Percentage (out of 1000)
Urticaria	-	10	35	45	4.5

Table 6: Acne and Perioral Dermatitis

Acne and Perioral dermatitis	<1 year	1-5 year	6-12 year	Total	Percentage (Out of 1000)
Acne	-	-	4	4	0.4
Perioral dermatitis	-	-	9	9	0.9

Amongst nevi and vascular malformation, most common nevus recorded was Nevus depigmentosus (10; 20.8%) followed by hemangioma (8; 16.66%), melanocytic nevus (5; 10.41%), epidermal nevus (5; 10.41%) [Table 7]. Hemangioma, salmon patch and portwine stain were observed in children <1 year of age while nevus depigmentosus was observed in children over 1 year of age. Also the most common site of hemangioma seen was scalp.

Table 7: Nevi and Vascular Malformation

Nevi & Vascular malformation	< 1 year	>1 year	Total	Percentage (out of 48)
Nevus depigmentosus	-	10	10	20.8
Hemangioma	8	-	8	16.66
Melanocytic nevus	2	3	5	10.41
Epidermal nevus	-	5	5	10.41
Hypomelanosis of Ito	-	5	5	10.41
Salmon patch	3	-	3	6.25
Portwine stain	3	-	3	6.25
Becker's nevus	-	2	2	4.16
Faun tail nevus	-	2	2	4.16
Halo nevus	-	2	2	4.16
Nevus of Ota	-	2	2	4.16
Angiokeratoma	-	1	1	2.08
Total	16	32	48	100.0

Of the total 42 patients of genetic disorders recorded, freckles (9; 21.42%) and ichthyosis vulgaris (9; 21.42%) were the most common type followed by EB (7; 16.66%) [Table 8].

Image 1 Epidermal Nevus



Image 2 Melanocytic Nevus



Image 3 Epidermolysis Bullosa

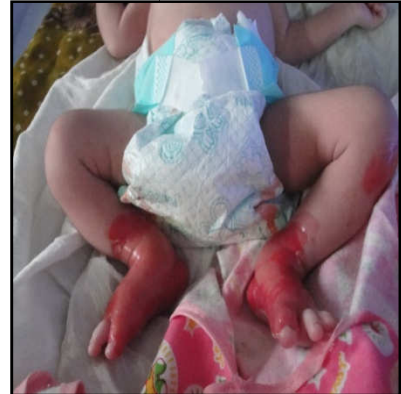


Table 8: Genodermatoses

Genodermatoses	No.	Percentage (Out of 42)
Freckles	9	21.42
Ichthyosis vulgaris	9	21.42
Epidermolysis Bullosa	7	16.66
Lamellar ichthyosis	5	11.9
Anhidrotic ectodermal dysplasia	4	9.52
Xeroderma Pigmentosa	2	4.76
Tuberous Sclerosis	2	4.76
Albinism	2	4.76
Bullous Ichthyosiform Erythroderma	1	2.38
Ichthyosis hystericx	1	2.38
Total	42	100.0

Image 4 Bullous Ichthyosiform Erythroderma



Image 5 Xeroderma Pigmentosa



Out of 1000 patients included in the study, phrynoderma and acrodermatitis enteropathica constituted about 25 (1.5%) and 3 (0.3%) respectively [Table 9].

Table 9: Nutritional

Nutritional	No.	Percentage (out of 28)
Phrynoderma	25	89.2
Acrodermatitis enteropathica	3	10.7
Total	28	100.0

The most common hair disorder observed in our study was alopecia areata in 42 (43.75%), 31 traction alopecia (32.29%) followed by 10 telogen effluvium (10.41%) and 8 monilethrix (8.33%). Patchy type of AA was the most common type observed. Also 2 of alopecia totalis, 2 of alopecia universalis and 1 of ophiasis were recorded [Table 10]. Family history positive in 5. Atopic association was seen in 5. Nail dystrophy was found in 5.

Most common autoimmune disorder in our study was vitiligo in 44 (75.8%) followed by 3 pemphigus vulgaris (5.11%), 4 morphea (6.89%), 3 CBDC (5.17%), 2 pemphigus foliaceus (3.4%), 1 SLE (1.72%) and 1 dermatomyositis (1.72%) [Table 11].

Table 10: Hair Disorders

Hair disorders	No.	Percentage (out of 96)
Alopecia Areata	42	43.75
Traction alopecia	31	32.29
Telogen effluvium	10	10.41
Monilethrix	8	8.33
Trichotillomania	3	3.125
Pseudopelade of brocq	1	1.041
Folliculitis decalvans	1	1.041
Total	96	100

Table 11: Autoimmune

Autoimmune	No.	Percentage (out of 58)
Vitiligo	44	75.8
Morphea	4	6.89
Chronic bullous disease of Childhood	3	5.17
Pemphigus vulgaris	3	5.11
Pemphigus foliaceus	2	3.4
Dermatomyositis (calcinosis cutis)	1	1.72
Systemic Lupus Erythematosus	1	1.72
Total	58	100

Image 6 Alopecia Totalis



Image 7 Dermatomyositis Calcinosis Cutis



Image 8 Chronic Bullous Disease of Childhood



Most common bullous dermatoses observed in present study was epidermolysis bullosa seen in 7 patients followed by pemphigus vulgaris seen in 3 patients followed by CBDC seen in 3 patients, pemphigus foliaceus in 2 patients, bullous LP in 1 patient & BIE in 1 patient [Table 12].

Drug induced urticaria (13; 41.9%) is the most common drug reaction followed by phototoxic reaction (6; 19.35%), FDR (5; 16.12%) and SJS (2; 6.45%) [Table 13].

Table 12: Bullous Dermatoses

Bullous dermatoses	No.	Percentage (out of 17)
Epidermolysis Bullosa	7	41.17
Pemphigus vulgaris	3	17.64
Chronic Bullous disease of Childhood	3	17.64
Pemphigus foliaceus	2	11.76
Bullous Lichen Planus	1	5.88
Bullous Ichthyosiform Erythroderma	1	5.88
Total	17	100

Table 13: Drug Reaction

Drug reaction	No.	Percentage (out of 26)
Drug induced urticaria	13	50
Phototoxic reaction	6	23.07
Fixed Drug Reaction	5	19.23
Steven Johnson Syndrome	2	7.6
Total	26	100

Image 9 Steven Johnson Syndrome



Image 10 Erythema Toxicum Neonatorum



Amongst the physiological conditions, most common condition recorded was mongolion spot in 50 (43.8%) followed by 31 miliaria (27.19%), 12 milia (10.5%), 11 ETN (9.64%), 7 neonatal acne (6.14%) and 3 infantile acne (2.63%).

Table 14: Physiological

Physiological	No	Percentage (out of 114)
Mongolion spot	50	43.8
Miliaria	31	27.19
Milia	12	10.5
Erythema Toxicum Neonatorum	11	9.64
Neonatal acne	7	6.14
Infantile acne	3	2.63
Total	114	100

Table 15: Others

Others	No	Percentage (out of 25)
Keratosis Pilaris	15	60
20 nail dystrophy	5	20
Xanthoma	2	8
Pityriasis Rubra Pilaris	1	4
Granuloma Annulare	1	4
Job's syndrome	1	4
Total	25	100

Discussion:

Pattern of pediatric dermatoses has varied in different studies. In our study, papulosquamous disorder is the most common disorder. However, in few other studies, eczema group has been the predominant dermatoses.^{1,2,3,4}

Of the eczematous dermatoses, we found that atopic dermatitis (38.41%) is common in 1-5 years of age. Seborrhoeic (35.36%) was more common in <1 year of age. Allergic dermatitis (16.46%) is more common in 6-12 years of age. Diaper dermatitis is most common

in less than 1 year age group (9.76%) These observations are consistent with the study by Thakare et al.⁵

Of the hypersensitivity reactions, we found the prevalence of papular urticaria shooting up suddenly when the patient enters the toddler age group. This may be attributed to the exposure to external environmental factors away from the cozy protection of home as well as increased physical contact with neighbours as the baby learns to walk. Maximum cases of urticaria were in the age group 6-12 years.⁶

In present study, nevus depigmentosus is the most common nevi, which is in contrast to the observations by Thappa et al.⁷ and Balai et al.⁸ in which hemangioma was more common.

Skin diseases are a major health problem in the pediatric age group and are associated with significant morbidity and psychological impact; this is more common with chronic dermatoses. Pediatric dermatoses require a separate view from adult dermatoses as there are important differences in clinical presentation, treatment and prognosis.

Conclusion:

Our study brings to light that papulosquamous disorders, genetic and autoimmune disorders constitute the major proportion of paediatric patients attending our institute. The incidence of paediatric dermatoses can be brought down by proper genetic counselling and increasing awareness among population regarding the influence of socio economic status, climatic exposure, dietary habits and external environment on various paediatric dermatoses. This study provides a preliminary baseline data for future epidemiological and clinical research. It might also help to assess the changing trends of paediatric dermatoses.

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