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A Study on Correlates of Dermatomes in Pediatric Age Group: Descriptive Clinical Study

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ABSTRACT
Impetigo is the commonest skin condition caused by bacteria, which is brought on by Streptococcus pyogenes and Staphylococcus aureus. Bullous impetigo and non-bullous impetigo, often known as impetigo contagiosa, are the two types seen. While impetigo contagiosa can affect any region of the body, it usually affects the exposed areas. Patients of pediatric age group attending dermatology OPD was examined thoroughly including general physical, systemic and dermatological examinations and all the details was recorded after obtaining Informed consent from the parent or guardian. All the observations was recorded in a pre-set Proforma in each case. Out of 184 patients with infections, 124 patients (67.39%) had poor personal hygiene and 60 patients (32.60%) had good personal hygiene. Out of 216 patients with non-infectious disorders, 197 patients (91.20%) had good personal hygiene and 19 patients (8.79%) had poor personal hygiene. Proportion of infections (67.39%) were more in patients with poor personal hygiene. Out of 184 patients with infections, 117 patients (63.58%) had overcrowding and 67 (36.41%) patients had no overcrowding. Out of 216 patients with non-infectious disorders, 197 (91.20%) patients had no overcrowding and 19 patients (8.79%) had overcrowding.

INTRODUCTION

TRL here are variations in the regional distribution of pediatric dermatosis in different parts of the world. Atopic dermatitis is the commonest dermatosis in Eastern and Western nations. Infections account for about half of all skin problems in India, with dermatitis coming in second with 25% of cases. Of these, 10.16 percent of cases are scabies, while 27.29 percent are bacterial infections. Out of these, fungal infections were 4.65% and viral infections were 3.68% respectively. 6.5% of the children have reported experiencing drug reactions and allergic reactions such as urticaria and papular urticaria[1,2]. Impetigo is the commonest skin condition caused by bacteria, which is brought on by Streptococcus pyogenes and Staphylococcus aureus. Bullous impetigo and non-bullous impetigo, often known as impetigo contagiosa, are the two types seen. While impetigo contagiosa can affect any region of the body, it usually affects the exposed areas. It begins as bullae, pustules that burst quickly to produce the characteristic crusty plaques that are honey coloured[3]. Secondary impetiginization refers to the development of impetigo on scabies lesions or atopic eczema that already exists. The face, groin are the sites of bullous impetigo. In terms of clinical presentation, it appears as a fast-rupturing, thin-walled, flaccid sub-corneal blister that leaves behind an erythematous, wet erosion and is encircled by a blister roof remnant. Scabies causes a wide range of lesions, including vesiculopustules, nodules, burrows and papules. The female mites are indicated by black dots in the burrows, which are white, linear, or serpiginous lesions that are situated in the stratum corneum[4]. The dermatophytic illness, tinea capitis, typically affects girls in their prepubescent years (3-7y). Trichophyton tonsurans is the cause of over 90% of infections. T. capitis, often known as the "grey patch", manifests as one or more alopecia patches with papules, pustules, crusting and scaling as inflammatory symptoms. Human papilloma viruses (HPV) are the common cause of verrucae, which are viral infections. The four main forms of warts are plantar warts, condyloma acuminata, verruca vulgaris and verruca plana. It usually affects the feet and periungual area. Hyper keratosis verrucous skin coloured (rough-surfaced) papules are seen. It could manifest as one, many, confluent, or solitary lesions[5]. Warts can cause itching and if you scratch them, you might get a linear pattern of lesions that is a sign of autoinoculation. Parring followed by cryodestruction is a useful therapeutic modality. Younger children are not ideal candidates for cryotherapy because of pain. HPV 3, 10 and 28 are the viruses that cause verruca plana, or plane warts. They are usually flat-topped, tiny (2-5mm), papules having a granular surface. Koebnerization is common and shaving in teens may result in autoinoculation with broad involvement. The suggested treatments are topical resinoid, such as adapalene or retinoin[6].

MATERIALS AND METHODS

Study Subject: Patients aged 0-18 years attending dermatology OPD.

Sampling Method: Purposive sampling.

Study Design: Cross sectional descriptive study.

Sample Size: The required minimum sample size to conduct the study is 370.

Inclusion Criteria: All children aged 0-18 years attending dermatology OPD and ready to participate in study after consent from parents.

Exclusion Criteria: Patients whose parents are not giving consent and patients who are not willing to participate in the study

Methods and Collection of Data:

- Patients of pediatric age group attending dermatology OPD was examined thoroughly including general physical, systemic and dermatological examinations and all the details was recorded after obtaining Informed consent from the parent or guardian. All the observations was recorded in a pre-set Proforma in each case.
- Investigations such as complete blood count, for fungal infections-examination of scrapings for fungus, for bacterial infections-pus swabs for culture and smears from pustules for Gram staining and punch biopsy for histopathology was performed wherever they are required.

RESULTS AND DISCUSSIONS

Infections were more in 8-12 years of age 98 patients (53.26%), compared to 42 patients (22.82%) in 2-7 years age group and 41 patients (22.28%) in 13-18 years age group. Non-infectious disorders were more in 8-12 years 73 patients (33.79%), compared to 62 patients (28.70%) in 2-7 years age group. There is statistically significant association found between age and type of dermatosis ($p<0.001$). Among infections and infestations, in 0-1 years age group, scabies, varicella and viral exan them, each 1 patient were present. In 2-7 years age group, bullous impetigo 11 patients and scabies 10 patients were the commonest. In 8-12 years age group, scabies 28 patients and tinea cruris 20 patients were the most common. In 13-18 years age group, scabies 11 patients and Pityriasis versicolor 10 patients were the most common. In Non-infectious disorders, among 0-1 years age group, Diaper dermatitis and Atopic dermatitis 8 patients were the most common. In 2-7 years age group, Atopic dermatitis was the most common 24 patients, followed by Pityriasis alba and Papular urticaria 7 patients. In 8-12 years age group, Pityriasis alba and Atopic dermatitis was the most common 13 patients, followed by papular urticarial 10 patients. In 13-18 years age

Table 1: Distribution of Dermatomes According to Age

Age in Years	Infections	Non Infectious Disorders	Total	Chi square value	P value
0-1 Yrs	3	22	25		
2-7 Yrs	42	62	104		
8-12 Yrs	98	73	171	22.7	<0.001
13-18 Yrs	41	59	100		
Total	184	216	400		

Chi square value 22.7, P value <0.001, highly significant

Table 2: Distribution of Patients with Infectious Disorders According to their Age

Category	Dermatomes	Age				
		0-1 Years	2-7 Years	8-12 Years	13-18 Years	Total
Bacterial (6.8%)	Bullous Impetigo	0	11	9	0	20
	Folliculitis	0	0	0	1	1
	Furuncle	0	0	1	0	1
	Non bullous Impetigo	0	4	0	0	4
	Pitted Keratolysis	0	0	1	0	1
Fungal (13.8%)	Pityriasis Versicolor	0	0	3	10	13
	Tinea Capitis	0	3	4	2	9
	Tinea Corporis	0	1	4	1	6
	Tinea Facei	0	1	0	0	1
	Tinea Cruris	0	0	20	6	26
Viral (12.8%)	Hand Foot Mouth Disease	0	6	6	0	12
	Molluscum Contagiosum	0	3	4	1	8
	Palmar Wart	0	1	5	1	7
	Plantar Wart	0	1	1	1	3
	Varicella	1	3	3	1	8
	Viral Exanthem	1	2	1	0	4
	Plane Wart	0	0	4	5	9
Parasitic (12.8%)	Scabies	1	10	28	11	50
	Pediculosis	0	0	1	0	1
	Total	3	42	98	41	184

Table 3: Distribution of Patients with Non Infectious Disorders According to Age

Category	Dermatomes	Age				
		0-1 Years	2-7 Years	8-12 Years	13-18 Years	Total
Dermatitis	Atopic dermatitis	8	24	13	0	45
	Seborrheic dermatitis	3	1	5	18	27
	Pityriasis alba	0	7	13	1	21
	Allergic contact dermatitis	0	1	3	1	5
	Diaper dermatitis	8	0	0	0	8
	Angular cheilitis	0	1	0	0	1
	Irritant contact dermatitis	0	1	0	0	1
	Lip lick dermatitis	0	0	1	0	1
	Peri oral dermatitis	1	0	0	0	1
	Photodermatitis	0	0	0	1	1
	PMLE	0	0	0	1	1
	Pompholyx	0	1	0	0	1
Sweat and sebaceous gland disorders	Acne vulgaris	0	0	4	25	29
	Miliaria crystallina	0	2	0	0	2
	Miliaria rubra	0	6	0	0	6
Hypersensitivity disorders	Acute urticaria	0	4	10	3	17
	Papular urticaria	1	7	9	2	19
Keratinization disorders	Ichthyosis vulgaris	0	1	0	0	1
Nutritional disorders	Phrynoderma	0	1	6	0	7
Papulosquamous disorders	Pityriasis rosea	0	0	2	2	4
	Psoriasis vulgaris	0	0	0	1	1
	Lichen nitidus	0	0	0	1	1
	Lichen striatus	0	1	0	0	1
Pigmentary disorders	Acral vitiligo	0	1	4	0	5
	Vitiligo vulgaris	0	2	2	1	5
	Mucosal vitiligo	0	1	1	1	3
	Post inflammatory hypopigmentation	0	0	0	1	1
Others	Infantile hemangioma	1	0	0	0	1
	Total	22	62	73	59	216

Table 4: Distribution of Study Subjects According to Seasons

Seasons	Frequency	Percent
Summer	178	44.5
Winter	138	34.5
Rainy	19	4.8
Spring	65	16.3
Total	400	100

Table 5: Season Wise Distribution of Dermatome Among Study Subjects

Category		Infections	Non-infectious disorders	Total	Chi-square	p-value
Season	Summer	107	71	178		
	Winter	35	103	138	38.54	<0.001
	Rainy	10	9	19		
	Spring	32	33	65		
Total		184	216	400		

Chi square -38.53, p value <0.001.

Table 6: Comparison of Hygiene and its Relation to Dermatome

		Category Infections	Non Infectious Disorders	Total	Chi square	P-value
Personal Hygiene	Good	60	197	264		
	Poor	124	19	136	16.6	<0.001
Total		184	216	400		

Chi square -16.6, p value <0.001

Table 7: Comparison of Overcrowding and its Relation to Dermatome

		Category Infections	Non Infectious Disorders	Total	Chi square	P-value
Overcrowding	Absent	67	197	264		
	Present	117	19	136	132.94	<0.001
Total		184	216	400		

Chi square-132.94, p value <0.001

group, Acne vulgaris 25 patients was the most common followed by Seborrheic dermatitis 18 patients. In our study, out of 400 patients, 178 (44.5%) were from summer season, followed by 138 (34.5%) from winter season. Proportion of non-infectious disorders were more in winter season 103 (74.63%) and proportion of infections were more in summer season 107 (60.11%). There is statistically significant association found between dermatoses and seasons (p<0.001). Out of 184 patients with infections, 124 patients (67.39%) had poor personal hygiene and 60 patients (32.60%) had good personal hygiene. Out of 216 patients with non-infectious disorders, 197 patients (91.20%) had good personal hygiene and 19 patients (8.79%) had poor personal hygiene. Proportion of infections (67.39%) were more in patients with poor personal hygiene. There is statistically significant association found between dermatosis and hygiene (p<0.001). Out of 184 patients with infections, 117 patients (63.58%) had overcrowding and 67 (36.41%) patients had no overcrowding. Out of 216 patients with non-infectious disorders, 197 (91.20%) patients had no overcrowding and 19 patients (8.79%) had overcrowding. Proportion of infections (63.58%) were more in patients with overcrowding. There is statistically significant association found between dermatosis and overcrowding (p<0.001).

In our study, Infections were more in 8-12 years of age 98 (53.26%) compared to 2-7 years 42 (22.82%) and 13-18 years 41(22.28%). Non-infectious disorders were more in 8-12 years 73 (33.79%), compared to 2-7 years 62 (28.70%). There is statistically significant association found between age and type of dermatosis (p<0.001). Overall, Diaper dermatitis, Atopic dermatitis, Seborrheic dermatitis, Papular urticaria and Varicella were more common in 0-1 years age group. In 2-7 years age group, Atopic dermatitis, Bullous impetigo, Scabies, Pityriasis alba, Hand foot mouth disease were more common. In 8-12 years age group, Scabies, Tinea cruris, Atopic dermatitis, Pityriasis alba and Acute urticaria were more common. While in 13-18 years age group, Acne vulgaris, Seborrheic dermatitis, Scabies, Pityriasis versicolor and Tinea cruris were more common. This is almost in accordance to the study done by Sugat a Jawade[7]. Majority of dermatoses were recorded in summer season 178 patients (44.5%) and 138 patients (34.5%) from winter season. This was similar to a study by Sarika Pawar[8] who found that the majority of dermatoses were recorded in summer (331., 41.37%), winter (267, 33.37%). Proportion of noninfectious disorders were more in winter season 103 (74.63%) and proportion of infections were more in summer season 107 (60.11%). There is statistically significant association found between dermatosis and seasons (p<0.001). The studies done by Sarika Pawar[8] and Bisht[9] have similar findings[10]. Proportion of infections (67.39%) were more in patients with poor personal hygiene. There is statistically significant association found between dermatosis and hygiene (p<0.001). Proportion of infections (63.58%) were more in patients with overcrowding. There is statistically significant association found between dermatosis and overcrowding (p<0.001).

CONCLUSION

- Non-infectious disorders were more in 8-12 years 73 patients (33.79%), compared to 62 patients (28.70%) in 2-7 years age group. There was statistically significant association found between age and type of dermatoses.
- Hygiene practices and overcrowding had significant association with infectious dermatoses.
- There was statistically significant association found between dermatoses and seasons with non-infectious disorders being more common in winter season 103 (74.63%) and infections being more in summer season 107 (60.11%).

REFERENCES

1. Sardana K, V. Manchanda, M. Rajpal, V.K. Garg and D.S. Chauhan, 2007. Bacterial pyoderma in children and therapeutic options including management of community-acquired methicillin resistant Staphylococcus aureus. International Journal of Dermatology. 46:309-13.
2. Sethuraman G. and A.J. Mancini, 2008. Neonatal Skin Disorders and the Emergency Medicine Physician. Clinical Pediatric Emergency Medicine. 9:200-9.
3. Hay RJ., 2009. Scabies and pyodermas-diagnosis and treatment. Dermatologic Therapy. 22:466-74.
4. Shmidt E,. And J. Levitt, 2012. Dermatologic infestations. International Journal of Dermatology. 51:131-41.
5. Diamantis S.A, D.S. Morrell and C.N. Burkhart, 2009. Pediatric Infestations. Pediatric Annals. 38:326-32.

6. Currie B.J. And J.S. McCarthy, 2010. Permethrin and Ivermectin for Scabies. New England Journal of Medicine. 362:717-25.
7. Jawade S, V. Chugh, S. Gohil, A. Mistrya and D. Umrigar, 2015. A clinico-etiological study of dermatoses in pediatric age group in tertiary health care center in South Gujarat region. Indian Journal of Dermatology. 60:635.
8. Pawar S, V.H. Wankhade, B.B. Supekara and R. Pratap Singh, 2020. Pattern of pediatric dermatoses and seasonal variations in a tertiary referral center in central India. Iranian Journal of Dermatology [Internet]. [cited 2022 Mar 29]. 22:145-50.
9. Rana S, A. Mehta, R. Singh, B. Aggarwal, J. Bisht and N. Kumari, 2015. Pattern of dermatoses in preschool children in a teaching hospital in Uttarakhand, India. Indian Journal of Paediatric Dermatology.
10. Kalpesh M. Prajapati and Bela Padhiar, 2020. A study of paediatric dermatoses in tertiary care center, Gandhinagar, Gujarat. IP Indian journal of clinical and experimental dermatology. 4:179-84.