

Skin Disorders of Childhood

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Abstract

Background: Nearly 1/3 rd of pediatric outpatient visits involve a dermatology complaint. Pediatric dermatoses needs a separate view from adults, due to differences in clinical presentation & treatment.

Aim: To study the incidence & prevalence of pediatric dermatoses between the age group of 0-14 yrs in a period of 6 months.

Materials & Methods: All children, 14yrs & below attending the Out patient department (OPD) of DVL, between January-June 2014 were enrolled in the study. Diagnosis made by detailed history, clinical examination & appropriate investigations.

Results: Out of 19,803 new cases 2591 children (13.08%) (1262 mch, 1329 fch) with 22 different dermatoses were encountered Bacterial-36.8%, infestations-17.86%, fungal-5.48%, viral-7.48%, genodermatoses-1.73%, Drug eruptions-0.01%, Allergic diseases-4.24%, Haemangiomas-0.47%, Nutritional dermatoses-3.35%, sweat gland disorders-5.4%, Acne-0.8%, physiological conditions-1.04%, sebaceous gland disorders-1.23%. **Discussion & Conclusion:** Skin conditions like infections, infestations and insect bite reaction are preventable through proper health education about personal hygiene regular school & hostel health programmes, encouraging use of mosquito nets etc. Parents should be counselled about early treatment & provision of nutritious diet to the child to prevent secondary infections and complications. Emphasis must be made on prenatal diagnosis and counseling to the parents to prevent genodermatoses.

Keywords: Bacterial infections, infestations, fungal infections, pediatric dermatoses, viral infections.

I. Introduction

Skin diseases in the pediatric population are common all over the world with the reported incidence varying between 9% and 37%⁽¹⁾. Skin diseases constitute 30% of all outpatient visits to a pediatrician and 30% of all visits to a dermatologist involve children. 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. Pediatric dermatoses requires a separate view from adult dermatoses as there are important differences in clinical presentation, treatment and prognosis. Dermatoses in children are more influenced by socioeconomic status, climatic exposure, dietary habits and external environment as compared to adults. Cutaneous infections are common in children during school going years. Most of the cutaneous diseases with genetic abnormalities also have onset in the pediatric age-group.

Wide range of primary skin disorders are seen during childhood and skin is often a marker of underlying systemic diseases and hereditary syndromes⁽²⁾. The pattern of skin diseases varies from country to country with pyoderma and malnutrition being more prevalent in developing countries, while eczemas are more common in developed countries. This can be attributed to differing climatic, cultural and socio-economic factors involve patients of pediatric age group.

II. Materials & Methods

All children, 14yrs & below attending the Out patient department (OPD) of DVL, between January-June 2014 were enrolled in the study. A detailed general, systemic and cutaneous examination was done. Relevant investigations were carried out whenever deemed necessary. The findings were recorded in a proforma for analysis and interpretation of data

III. Results

Out of total 19,803 new patients examined 2591 children (13.08%) (1262 mch (48.70%), 1329 fch (51.29%)). total of 66 dermatoses were recorded and divided into 19 groups [Table 1].

Frequency of dermatoses		
Infections	49.8%	1291
Infestations	17.86%	463
Pigmentary disorders	2.81%	73
Genodermatoses	1.73%	45

S e b a c e o u s g l a n d	1 . 2 3 %	3	2
S w e a t g l a n d s	5 . 4 0 %	1	4 0
A c n e	0 . 8 %	2	2
A l l e r g i c d i s o r d e r s	4 . 2 4 %	1	1 0
E c z e m a	7 . 4 4 %	1	9 3
D i s o r d e r s o f h a i r & n a i l	1 . 3 8 %	3	6
D i s o r d e r s o f k e r a t i n i s a t i o n	0 . 3 %	1	8
C u t a n e o u s v a s c u l a r r e a c t i o n s	0 . 0 2 %	7	
D r u g e r u p t i o n	0 . 0 1 %	3	
P h o t o d e r m a t o s e s	0 . 3 %	8	
H e m a n g i o m a s	0 . 4 6 %	1	2
N u t r i t i o n a l d e r m a t o s e s	3 . 3 5 %	8	7
B l i s t e r i n g d i s o r d e r s	0 . 2 3 %	6	
P h y s i o l o g i c a l c o n d i t i o n s	1 . 0 9 %	2	7
M i s c e l l a n e o u s	0 . 8 %	2	3

Infections constitutes of 1291 patients(49.8%) , bacterial infections955 (36.8%) were the most common, followed by viral194 (7.48%) &fungal142 (5.48%), . The most common type of eczema193(7.44%) was atopic dermatitis (3.08%)was most common Among infestations , scabies (15.3%) was the most common followed bypediculosiscapitis(2.47%).Among pigmentary disorders73(2.81%) ,post inflammatory hyperpigmentation is the most common (1.5%) followed by vitiligo25(1%).In sebaceous gland disorders32(1.23%),seborrheic dermatitis (0.9%) is the most common & infantile seborrheiccapitiswas present in 0.3% of cases.Acne comprises of22cases (0.8%).In genodermatosis45(1.73%),Ichthyosis 14(0.54%) most common followed by other genodermatosis like neurofibromatosis 6(0.23%), the tuberous scleros4 (0.15%), xerodermapigmentosum4(.15%),epidermolysisbullosa5 (0.19%) ,ectodermal dysplasia4(.15%) and fabrys disease3(.11%).In nutritional disorders 87 (3.35%) we have phrynoderma (32-1.2%),acrodermatitisenteropathica9(0.3%) and protein energy malnutrition46(1.77%) .Among sweat gland disorders140(5.4%), miliarubra(69-2.66%) is the most common followed by miliriapustulosa (1.23%),periporitis (1.19%)&palmoplantarhyperhydrosis(0.3%).Among Eczemas(7.44%),atopic dermatitis (3.08%) was the most common followed by Pytriasis alba (1.6%) ,allergic contact dermatitis(1.1%),and irritant contact dermatitis 3(0.11%).Among blistering disorders6(0.23%) chronic bullous disease of childhood 1 (0.03%) case ,epidermolysisbullosa 3(0.11%) cases ,colloidan baby 2 (0.07%)cases .Drug eruption seen in 3(0.11%) cases .Hair and nail disorders were present in 36(1.38%).Among allergic disorders 110(4.24%),Insect bite rash/papularurticaria was most common(3.7%) followed by beetle dermatitis(0.46%) In miscellaneous conditions 23(0.8%) we have median raphe cyst 2 (0.07%),lichen planus6(0.2%),lichen nitidus4(0.15%),lichen striatus3(0.11%),infantile fibroma ofreye1(0.03%) and trichoepithelioma2(0.07%).In physiological conditions 27(1.09%),winter xerosis11(0.42%)is the most commonfollowed byPhysiologic peeling 8(0.30%),erythematoxicmneonatorum 4 (0.15%) and cutis marmorata 2(0.07%). Physiologic desquamation was significantly higheramong newborn babies who were delivered fromcesarean sections

Chronic Bullous Disorder Of Childhood



Xeroderma Pigmentosa



Congenital Mega Melanocytic Nevus



Collodion Baby



Epidermolysis Bullosa



IV. Discussion

In many western studies, atopic dermatitis was found to be most common dermatoses whereas studies from developing countries usually demonstrate infectious diseases as the most common. Our study also found infectious diseases as the most common dermatosis and among the infectious diseases the pyoderma is most common that usually indicate the low socioeconomic status and poor hygiene status. But, since raising livestock and agriculture are the mainstay in rural area, dermatophyte infections were also found to be common as well as insect bites.

The pattern of skin disease is a consequence of poverty, malnutrition, overcrowding, poor hygiene, illiteracy, and social backwardness in many parts of India. The evaluation for skin disorders is an important component of primary health care practice for all, including children. Status of health, hygiene and personal cleanliness of a society can be judged from the prevalence of certain skin diseases.

Among infective dermatoses (36.8%), bacterial was the most common entity followed by viral infection (194; 7.48%) and fungal (142; 5.48%). Out of bacterial infections, secondary pyoderma 567 (21.11%) was the commonest entity followed by impetigo 268 (10.34%). Skin infections are not uncommon during the neonatal period. This may be due to changes in the social and cultural behaviour. Pre-school age group and young children are more exposed to bacterial infections especially the contagious ones such as impetigo. Although overcrowding, poor hygiene and existing skin disease, especially parasitic, predispose to infection, yet many cases occur in previously healthy subjects with good standard of living.

We found the prevalence of impetigo, furunculosis, miliaria and 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. The finding also emphasized the high degree of parental care, an infant usually commands. Later, diminution of prevalence of miliaria as the toddlers reach the pre-school-child age group may be due to development of some degree of tolerance to the environmental factors.

Of the infestation group, scabies was the most common entity recorded in 399 (15.3%) patients. Some children develop widespread scabies. The scabies rash

covered most of the body in 63 patients. Child's palms, soles, and scalp is infested with mites. In babies, the rash often appears on the palms and soles. Babies become very irritable and often do not want to eat or sleep. Children, too, are often very irritable. The itch can keep them awake at night.

Molluscum contagiosum 42 (1.62%) was the commonest viral infection followed by warts 38 (1.46%). Out of various fungal infections tinea corporis & tinea cruris 66 (2.54%) followed by candidal intertrigo 55 (2.12%) were the commonest. In sebaceous gland disorders 32 (1.23%), seborrheic dermatitis (0.9%) is the most common followed by infantile seborrheic capitis (0.03%). Low temperature and low humidity in winter are among many of the presumed etiological factors of seborrheic dermatitis.⁽³⁾ This may explain the high prevalence of the same during winter in our study. Sebaceous secretion rates are high in neonates due to placental transfer of maternal androgens. Sebaceous gland activity decreases from the end of the first month. It explains the relatively high incidence of seborrheic dermatitis in infancy and the steadily declining trend as the baby grows up. Among sweat gland disorders 69 (2.66%), miliaria rubra 69 (2.66%) is the most common followed by miliaria pustulosa (1.23%), perioritis (1.19%) & palmoplantar hyperhidrosis (0.3%). Miliaria seen in our area is due to hot and humid climate in tropical countries; these miliaria lesions when secondarily infected leads to perioritis.

Among eczematous disorders (193-7.44%) atopic dermatitis to be the commonest (88; 3.39%) followed by allergic contact dermatitis (ACD) (1.1%), and irritant contact dermatitis 3 (0.7%). Diagnosis of ACD in early life is vital not only for improvement of the current dermatitis and to stop recurrence but it also provides valuable guidance in choosing the right occupation in the future and, most

importantly, it may guide the parents to change those personal habits that may be harmful to their children. Pityriasis alba was present in 42 (1.6%) Twenty four patients of atopic dermatitis had atopic background. For some infants atopic eczema can be a severe chronic illness with a major impact on the child's general health and on the family. A minority of children will continue to have eczema as adults. The exact cause of eczema is not clear. Precipitating or aggravating factors may include food allergens (most commonly, egg) or environmental allergens/irritants, climatic conditions, stress and genetic predisposition. Management of atopic eczema consists of education; avoidance of triggers and allergens; liberal use of emollients or topical steroids to control inflammation; use of antihistamines to reduce itch; and treatment of infection if present. Treatment with systemic agents may be required in severe cases

Among Genodermatoses 45 (1.73%), Ichthyosis 15 (0.54%) is the most common followed by other genodermatoses like neurofibromatosis 6 (0.23%) tuberous sclerosis 4 (0.15%) xeroderma pigmentosum 4 (0.15%), epidermolysis bullosa 5 (0.19%), ectodermal dysplasia 4 (0.15%) and Fabry's disease 3 (0.11%). The exact incidence of these disorders has not been reported in the literature but it is thought that at least 1% of all live births had disorder inherited in a simple Mendelian fashion. The authors feel that detection of Acrocentric

Association in genodermatoses, like Bloom syndrome, tuberous sclerosis, Monilethrix, may have a predictive value. Hence early detection and counseling both the parents and patients may help them to live and cope with the disease⁽⁵⁾.

Among the allergic disorders 110 (4.24%) disorders, papular urticaria formed the largest (62; 59.05%) group followed by beetle dermatitis

The establishment of Pediatric Dermatology (PD) as a specialty is rather a recent activity with about 30 years background in U.S. and Europe. Although dermatology and pediatrics residency programmes cover the main topics of PD, the specialists on PD will probably fulfill an important gap. The epidemiologic studies worldwide in the field of PD are limited. Geographical, environmental and socioeconomical factors may alter the frequencies of diseases in pediatric population.

In nutritional disorders 87 (3.35%) we have phrynoderma 32 (1.23%), acrodermatitis enteropathica 9 (0.34%) and protein energy malnutrition 46 (1.77%) The patients with nutritional dermatoses also had systemic manifestations, prompting the patient to attend OPD. Good nutrition is central to health in many ways, impacting on disease and quality of life. Majority of children in developing countries are malnourished. In general nutritional disorders may be caused by malnutrition, strict vegetarian diet, malabsorption from various causes, chronic illness, food faddism or ignorance of the nutritional needs of children.

One should encourage breast milk during first six months of life and see that children get all their nutrients for food or other than vitamin supplements as far as possible. Age appropriate foods prevent obesity & weight related diseases such as diabetes mellitus.

Vitamin D is essential for calcium absorption & for maintaining bone health in the pediatric population. They are low vitamin D concentrations found in breast milk. For exclusively breast fed infants, vitamin D supplements should be recommended. In acquired zinc deficiency, treatment can be stopped after the precipitating cause is resolved. In acrodermatitis enteropathica, zinc therapy is maintained throughout the patient life span.

Food allergy has been recognised as one of many factors known to aggravate atopic eczema but the extent to which it plays a part in the diagnosis and management of food - related eczema remains a subject of debate for dermatologists. Cow's milk containing penicillin spores, chocolates, food additives, citrus fruits, fish, shell fish, cheese, eggs, meat, nuts, alcohol, caffeine, tomatoes and wheat are known to aggravate atopic dermatitis. Histamine release in both normal and atopic subjects may be the reason for aggravation. Foods implicated in causing urticaria are those aggravating atopic dermatitis. Vitamin -A supplementation should be given to phrynodermatopaths. In acrodermatitis enteropathica supplements of zinc should be given.

The prevalence of certain dermatoses may be influenced by seasonal and climatic changes. This was quite evident in our study in which atopic dermatitis and seborrhoeic dermatitis were noted predominantly in winters while papular urticaria was seen more frequently in rainy season. Dhare *et al.*, in a large series of 672 children of atopic dermatitis documented disease aggravation during winters in 67.14% and 58% of infantile and childhood atopic dermatitis cases, respectively. Banerjee *et al.*, studied seasonal variations in pediatric dermatoses and found scabies and seborrhoeic dermatitis to be more prevalent during winter, while impetigo, furunculosis, and miliriaduring summer and rainy seasons. Papular urticaria was more frequent in the rainy season. Almost a similar observation was documented in our study also.

The pattern of skin diseases in pediatric 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. The infants are mostly confined to their household, while preschool children aged one to five years are exposed to their neighborhood. Thus, childhood age may be considered as a surrogate marker for environmental risks.⁽⁸⁾

V. Conclusion

Skin diseases in the pediatric population are common all over the world including rural and urban areas. There is variation in the pattern of dermatoses, with eczemas being the most common skin disorder in developed countries and infections and infestations in the developing countries. There is an obvious need for diagnostic and therapeutic training for dermatologists, general practitioners and pediatricians in this group of disorders.

This study emphasizes the need for providing frequent dermatology services to the community at primary health care level so that the burden of dermatoses, especially infectious dermatoses, may be reduced in the community. This can be accomplished by spreading awareness among the masses about different dermatoses, various aspects of personal hygiene and sanitation conditions and also by provision of frequent medical consultations at the primary care levels. Larger studies should be conducted in different regions in order to assess the actual magnitude of dermatological concerns in the community at the grass root level

Genetic counseling is a process of communication & education that addresses concerns relating to the development and/or transmission of a hereditary disorder⁽⁹⁾. The steps involved in genetic counselling are: establishment of the diagnosis, assessment of risk, communication with the couple, discussion of

the options, & long term contact & support. Medical advice should be provided by a specialist in this field with a thorough knowledge of the disease. While counselling a dermatologist should not forget that the common people may have limited knowledge of biology & genetics & explanation regarding probable chances of disease may appear too mathematical to them. Hence discussion should be undertaken in a popular science language, with due regard to the prevailing cultural and religious beliefs and with sympathy to an affected family. Genetic counselling can be supplemented with the opportunity of prenatal diagnosis wherever practical⁽¹⁰⁾.

It is important to reach at risk pregnant women, new mothers and children with vitamins & minerals that are essential to a child's survival. Nutrients that are most likely to be deficient in a child's diet like calcium, iron, vitamin C, vitamin A, folic acid and vitamin B6 should be supplemented appropriately after identifying the underlying cause for their deficiency. Protein supplement and treatment of underlying systemic illness are equally important.

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