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Original Research Paper

Dermatology

CLINICO - EPIDEMIOLOGICAL STUDY OF NON- INFECTIOUS DERMATOSES IN CHILDREN BETWEEN 6-12 YEARS OF AGE.

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ABSTRACT

Context: Non infectious dermatoses in children encompass a diverse array of skin conditions that are not caused by infections. Lack of adequate nutrition, climatic changes, genetic factors may be contributing factors. Non infectious dermatoses is a potential concern in our clinical practice. **Aims:** To determine the prevalence and patterns of non-infectious dermatoses in children between 6-12 years in the outpatient department of dermatology in a teaching hospital. **Settings and Design:** Cross sectional observational study **Methods and Material:** All non-infective dermatoses in peadiatric age group (between 6 years to 12 years) both male and female who attended dermatology OPD from February 2024 to June 2024 were included. The data was descriptively analysed using SPSS software. **Results:** A total of 190 cases of non-infectious dermatoses were seen in our OPD. 44 % of children presented with eczematous disorders ,30 % with papulosquamous disorders ,9%with hypersensitivity disorders,3% with photodermatoses,2.5% with pigmentary dermatoses,1.5% with nail disorders ,1.5% with hair disorders,2.5% with appendageal disorders,1% with drug reactions, 2% with keratinization disorders and 3% children presented with other miscellaneous disorders. **Conclusions:** Non infectious dermatoses are common in children, in clinical practice and it is a potential concern. These range from common disorders like eczema and psoriasis to less frequent disorders such as alopecia areata and epidermolysis bullosa. Managing noninfectious dermatoses in children requires careful attention to symptoms, triggers and appropriate treatment options tailored to each condition.

KEYWORDS : Children, Noninfectious dermatoses, nevus, eczema, papulosquamous.

INTRODUCTION:

Paediatric dermatology deals with skin conditions in children which differs from adults. 30% of patients who consults dermatologists are children. Genetic factors play a major role in paediatric dermatoses, especially in non-infectious cases[1]. Factors like malnutrition, climatic exposure, illiteration, environmental pollution, genetic abnormalities and overcrowding influence dermatoses in children.[2,17]Paediatric dermatoses though rarely is life threatening,can result in restricted physical activity, absenteeism from school.There are relatively few studies has been done in recent time globally as well as from our geographical location.Hence, the present study was taken to focus on prevalence of skin disorders with non- infective etiology in children, as it is misdiagnosed and needs appropriate timely intervention.

Subjects and Methods:

This hospital based cross sectional study is conducted at 740 bedded multispeciality hospital and teaching institute in Puducherry.It provides health care services to patients from Puducherry and neighbouring districts of Tamilnadu. The study was done in 190 patients who attended Dermatology OPD of our Institute, between February 2024 to June 2024 (6 months).All children between the age of 6-12 years, with non-infectious etiology including both males and females, who are attending our DVL OPD were included. Children with infectious etiology were excluded. Consecutive random sampling was done and all children who met inclusion criteria participated in the study. This study was done after getting clearance from the Instituitional research and ethics committee approval.Verbal and written consent of patient's parents/guardians and assent in children greater than 8 years of age were obtained. Detailed clinical history was taken and thorough general, systemic and mucocutaneous examination was done. Relevant investigations such as KOH mount, gram stain, Tzanck smear, skin biopsy, Complete blood count were done in patients when required.

All details were collected in case report form . Data is entered with socio-demographic variables, sex, dietary diversity. The prevalence of various lesions were determined using standard cut off. They were represented as frequency and percentage with 95% confidence interval.

For quantitative data unpaired t-test was applied and for qualitative data, Chi-square test was used. Appropriate treatment and counselling were given to the patients.

RESULTS:

A total of 190 cases of non-infectious dermatoses were identified in our OPD in our institute between February 2024 to June 2024 of which 99(52.1%) children were male and 91(47.9%) are females. In our study, we found 130 cases were from rural area and 60 cases from urban background. There is no much gender predilection, out of 190 cases 47.9% females and 52.1% males.

In our study majority of cases were symptomatic 82.1%. Few were asymptomatic and the predominant symptom was pruritus. We noticed in majority of cases, there was involvement of extremities, lower limb (38%) followed by upper limb (30 %) without involvement of other body areas.

Nail and genitalia involvement was very rare. We observed face involvement in 6.3 % cases, trunk 5.3% of cases, 2.1 % patients showed scalp lesions.(Table 1) shows various distribution of non-infectious dermatoses.

Eczematous dermatoses is observed as most common dermatoses (44%). Among which 17.9% of patients had atopic dermatitis, Pityriasis alba(fig 1) presented in 7.3 % patients. 3.7% patients had seborrheic dermatitis, 3% had irritant contact dermatitis, 1% of patients had allergic contact dermatitis.

Various papulosquamous disorders(30%) noticed in our study includes lichen striatus 9%, lichen planus 4 %, guttate psoriasis 4%,lichen nitidus 9% (fig2), lichenoid drug eruption 1.5%, pityriasis lichenoides chronical 0.5%, juvenile pityriasis rubra pilaris was seen in 2% of cases.

Fig-1 Pityriasis Alba **Fig-2** Lichen Nitidus **Fig-3** Urticaria

Acute urticaria (fig 3) was seen in 5.3% of patients. Among hypersensitivity disorders papular urticaria in1.6%, insect bite reaction in 1% of patients and prurigo nodularis in 1.1 % of patients. Nutritional dermatoses were found in 1.6 %of patients. Among appendageal disorders alopecia areata was noted in 1.1 %, acne vulgaris in 1.1 % and brachydactyly were seen in 0.5 % patients.

In our study interestingly there was a case of drug reaction with features of Stevens Johnson syndrome 0.5%, which is least common in children and also there was a case of drug reaction (0.5%) .

Genodermatoses cases in this study group were ichthyosis vulgaris 0.5% , pigmentary mosaicism 0.5 % and acanthosis nigricans 0.5 %. Nevoid dermatoses such as inflammatory linear verrucous epidermal naevi 0.29 %(fig 4), Beckers nevus 0.5 % were present in our study. Among photo dermatoses 2.1 % patients had polymorphous light eruption.

Least common dermatoses were also noted in our study such as keloid0.5 %, granuloma annulare 1.1 %, id eruption 0.5 %. The data which is collected from this study helps in identifying the dermatological needs of children for early intervention. Since noninfectious paediatric dermatoses are chronic and relapsing, they are associated with significant morbidity and psychosocial impact on children in day to day life.

Table 1: Distribution Of Total Number Of Non-infectious Dermatoses

Non infectious dermatoses	Frequency	Percent
Eczematous disorders	101	44
Papulosquamous disorder	32	30
Hypersensitivity disorders	17	9
Photo dermatoses	7	3
Pigmentary disorders	6	2.5
Nail disorders	2	1.5
Hair disorders	3	1.5
Appendageal disorders	4	2.5
Drug reactions	2	1.0
Keratinization disorders	5	2.0
Miscellaneous disorders	11	3.0
Total	190	100

DISCUSSION:

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.[16,17]

In this study we included male and female children of age between 6-12 years, included urban and rural area, irrespective of socio-economic status. This study conducted in DVL OPD, in our hospital, after obtaining written consent from parents of the children those who participated in this study.

In our study of 190 children, we observed 44% of patients had eczematous dermatoses which was most common disorder in our study among which 17.9% of patients had atopic dermatitis a common condition which we see in a clinical practice. Pityriasis alba present with 7.3 %. 3.7% had seborrheic dermatitis, 3% had irritant contact dermatitis, 1% of patients had allergic contact dermatitis. In our study we observed highest number of eczematous disorders followed by papulosquamous disorders which coincides with other studies across the country.

Similarly in a study done by Agarwal et al, eczematous disorders were more common (30%), along with increased prevalence of papulosquamous disorders than the other studies.In a study done by Chitapur et al on school going children the eczematous diseases were more common, endogenous eczema (46 cases) was more common than exogenous eczema (33 cases). Pityriasis alba (27 cases) was the most common endogenous eczematous disease[14]

Ramaswami et al in their study of 550 children found that Eczema 24.14%was the most frequent skin condition in school-aged children, among eczematous disorders atopic dermatitis with flexural involvement seen in 26.31%[4].

In a similar study by Banerjee et al encountered that eczematous dermatosis was 22.98%, in which seborrheic dermatitis was commonest 13.42%[5].

In our study various papulosquamous disorders have been noticed in 30 % of patients.Similar study by Chandrika et al with 65 patients, Lichen Planus (64.6%) was the most common lesion followed by Psoriasis (24.6%), Pityriasis Rosea (6.2%), and Pityriasis Rubra Pilaris (3.1)[6].In a study done by Mendritta et al Koebner phenomenon was present in 15% of patients. Family history of psoriasis was reported in 22% of the patients[12].

In our study acute urticaria was seen in 5.3% of patients. Among hypersensitivity disorders papular urticaria was seen in 1.6% and insect bite reaction 1% of patients and prurigo nodularis in 1.1 %. Nutritional dermatoses were found in 1.6 % of patients.

Kaliyaperumal karthikeyan et al in their study from JIPMER on paediatric dermatoses observed insect bite reactions in 5.27% of patients and nutritional deficiency disorders 2.8%.[7] High frequency of insect bite reactions accounted may be due to most of the population were from rural area and poor socio economic state.

There were cases related to pigmentary disorders in our study, 2.6% patients had pre vitiligo 0.5% with segmental vitiligo 0.5%(fig 5) with post inflammatory pigmentation 0.5% and erythema dyschromicum perstans seen in 1.1 % patients.

Wafa y al saed et al in their study the most common dermatosis was pigmentary disorders 91.6 %, among which melanocytic naevi (68%) was most common followed by post inflammatory pigmentation 56.6% and other naevi 3.8%, CALM of 3.8% and vitiligo 1%.[8] We also observed less percentage of pigmentary disorders, urticaria and insect bite reactions which are similar to other studies on non-infectious paediatric dermatoses.

In our study interestingly there was a case of drug reaction like steven johnson syndrome and also there was a case of maculopapular drug reaction . Varsha madasani et al in their study observed 0.23% drug reaction cases in their study. They also observed keratinization disorders in 1.84 %, among which ichthyosis was seen in 0.46% followed by acanthosis nigricans 0.23%[1].

Genodermatoses cases in this study group were ichthyosis vulgaris 0.5%,pigmentary mosaicism 0.5 % and acanthosis nigricans 0.5 %. Nevoid dermatoses such as congenital melanocytic nevi 0.5 %, Beckers nevus 0.5 % were present in our study. In one case, we found autosomal recessive inheritance having history of consanguineous marriage. Naevoid disorders was seen in 2.09%, among which verrucous

epidermal naevus with typical distribution along linear and whorled pattern was seen in 0.69% followed by Beckers naevus 0.45%.

Among appendageal disorders, alopecia areata was noted in 1.1 % and acne vulgaris 1.1 %9 , brachydactyly were seen in 0.5 % patients. Al refu et al in their study on hair loss in children reported alopecia areata in 26.2% and telogen effluvium in 17.6% and lesser number of cases in trichotillomania. Telogen effluvium was seen commonly due to preceding history of fever.[9]

In a study done by podder et al, skin appendageal disorders constituted the second commonest disease group, accounting for 22.7% cases, higher than other studies (6.5%–13.2%).Acne was predominant, in contrast to other authors (seborrhoeic dermatitis >acne)[15]

Frenard et al in their study on prepubertal acne of 24 cases, observed 95.2% had inflammatory acne followed by 79.2% had comedonal acne and 29.2% had nodular form of acne.[10.]

Sweat gland disorders such as milaria rubra 1.1 % were noted in our study. Whereas in a study done by Karthikeyan et al,they observed prevalence of milaria in 4.1 %

In our study among photodermatoses 2.1 % patients had polymorphous light eruption, whereas Vani and ramamohan et al in their study noted PMLE in 1.1 % patients.[11]Low prevalence in our study may be due to hardening effect .

Least common dermatoses noted in our studies were keloid 0.5 %, granuloma annulare in 1.1 %, id eruption 0.5 %.

Least number of cases noted on nutritional dermatoses, drug reactions, genodermatoses similar to other studies in our country. In our study very few conditions had chronic course and remaining cases either acute or subacute and completely curable.Most pediatric dermatoses are attributable to physical factors, infections, and allergens. They require a separate view from adult dermatoses due to important differences in clinical presentation, treatment, and prognosis[18] We present this study to look into recent trends in prevalence of various paediatric dermatoses and different factors which are responsible for them.Thorough knowledge of recent pattern of paediatric dermatoses in our area could help in increasing the awareness among parents and children about possible preventive measures. This also forms background for planning community awareness programmes. Limitations of this study was, we did the study for a short span of time and only few patients could be followed up and we couldn't document various patterns of dermatoses in the community.

Fig-4 Ilven

Fig-5 Segmental Vitiligo

CONCLUSION:

The most common non infectious dermatoses in children were eczema, atopic dermatitis. There is some significant association between family history and development of eczema.There is higher prevalence of non-infectious dermatoses in urban areas compared to rural areas. Our study helps to increase awareness among parents and caregivers about importance of skin care and trigger avoidance.This study provides various data for further research into genetic and environmental factors contributing to development of various skin conditions.

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