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Original Research Article

Genital dermatoses in children in a tertiary care hospital in Northeast India

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ABSTRACT

Introduction: Skin conditions in children are impacted by their socio-economic status, environmental conditions, cultural and food habbits**.**
Aims & Objectives: To evaluate the frequency and pattern of non venereal genital dermatoses in children visiting the dermatology outpatient department at Silchar Medical College and Hospital, Silchar, a prospective research was carried out from December 2022 to December 2023**.**
Materials and Methods: 127 children aged 1 to 18 years who had non venereal genital dermatoses verified by relevant bedside and laboratory examinations were included in the current study after providing appropriate informed permission. They were divided into four age groups: young children (ages 1-3), preschoolers (ages 3-6), students (ages 6-10), and teenagers (ages 9-18).
Results: Of the 127 children—82 boys and 45 girls—37.77% attended school. Of the 110 children with infective dermatoses,75 percent lived in hostels; these individuals were primarily from rural areas and belonged to low (55.2%), middle (43.23%), and high (1.55%) socioeconomic groups. Bullous impetigo was the most prevalent infectious dermatosis in preschoolers, whereas genital scabies, tinea cruris, and molluscum contagiosum were the most frequent in teenagers. Of the 17 kids with non-infectious dermatoses, 55.2% come from a low-income background. 2.36% of patients had phrynoderma and nutritional deficiencies, whereas 0.79% had genital vitiligo. The additional non-infectious dermatoses that were discovered were eczema, hemangiomas, lichen planus, and lichen sclerosus.
Conclusion: school-going age group children are more likely to suffer from infectious dermatoses such as pyoderma, scabies, fungal infections than nutritional deficiencies. This is likely due to a combination of factors including poor health, poverty, poor personal hygiene, and a lack of access to soap and antifungals. Better nutrition and health education are recommended by our study.

1. Introduction

Children are less likely than adults to suffer from genital skin disease, and while many adult illnesses also affect children, there are some significant distinctions between the two age groups. The most prevalent causes of a persistent genital rash in adults and children of both sexes are psoriasis and eczema/dermatitis; lichen sclerosus is also common, especially in females.[1] Acute, recurring, and chronic candidiasis, are significant aspects of vulval dermatoses in female adults that are not observed in the non-estrogenized vulva and vagina of children, and tinea of the groin, although prevalent in males, is uncommon in children.[2] In children, genital birthmarks—especially haemangiomas—are a significant concern, but in adults, the likelihood of a resolution or diagnosis is likely to have passed long before. Only in the context of severe lichen planus or lichen sclerosus may adults experience the

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self-limiting condition known as fusion of the labia. Boys who get phimosis typically have prepuce and glans penis lichen sclerosus. Other than perianal cellulitis, balanitis, and group A hemolytic streptococcal vulvovaginitis, children are seldom afflicted with infectious genital disorders. Though rarely the cause of genital abuse in children, sexual abuse is always a concern to be taken into consideration in any genital presentation. Moreover, children are far less likely than adults to develop genital skin cancer, despite the fact that it is a genuine, although infrequent, issue in adults.It seems that girls are more likely than boys to have genital skin disease in the pediatric age range. There has been very little published research on the particular topic of pediatric genital illness, and considerably less on boys than girls. The majority of the literature concentrates on infections, tumors, and anatomical anomalies. In reality, in daily practice, anatomical anomalies, tumors, and infections are quite uncommon.

The prepubescent vulva's skin is said to be delicate and sensitive due to low estrogen levels in articles on pediatric vulval illness. Actually, there isn't any proof to support this. It is normal for a child's vulva to have less estrogen, and the idea that a child's vulval skin is more susceptible to illness is refuted by the fact that children experience vulval rashes far less frequently than adults do. In reality, estrogen is a risk factor that increases the likelihood of vaginitis, especially candidiasis, which is common in adults. Furthermore, when administered to youngsters, estrogen creams can cause severe irritation.

Examining a kid or teenager with a genital issue requires consideration for the likelihood that the parent and child would experience fear in addition to embarrassment. It's crucial to let them know what to expect, to give them authority over the inspection, and, in some situations, to refrain from touching. This can be accomplished by asking older children to assist with the inspection by pulling back a girl's labia or a boy's foreskin, or by letting them assist themselves. It's usually preferable to inspect a little kid on a parent's lap. It is crucial to reassure a youngster before the inspection begins that you are simply having a quick look and that it won't harm.

Acquiring the trust of a youngster is crucial, especially if the issue calls for constant observation.

2. Aims

To estimate the patterns and prevalence of non venereal genital dermatoses in pediatric age group.

3. Objectives

1. To estimate the patterns and prevalence of non venereal genital dermatoses.
2. To estimate the clinical and epidemiological aspects of non venereal genital dermatoses in children 1-18 years of age.
3. To study the impact of external factors like cosmetics, wearing tight undergarments and hygiene practices in children in the society on non venereal genital dermatoses.

4. Materials and Methods

4.1. Study design

Cross Sectional hospital based Study, approved by Ethics committee of Silchar Medical College, silchar.

4.2. Study subjects

Children visiting the Dermatology OPD of Silchar Medical College, Silchar, diagnosed clinically with non venereal genital dermatoses, between December 2022 and December 2023.

4.3. Methodology

A thorough epidemiological data set is collected, comprising the following details: name, age, sex, socioeconomic status, comprehensive medical history, physical examination, information on skin lesions, and preliminary diagnosis was made.

4.4. Inclusion criteria

Children between the age of 1 to18 years attending Dermatology OPD and clinical diagnosed to have features of non venereal genital dermatoses.

4.5. Exclusion criteria

1. Patients not willing to participate and guardian not willing to allow their children for the study.
2. Those cases which are repeated are also excluded.
3. Children with veneral genital dermatoses were excluded.

4.6. Data analysis

The clinico-epidemiological data is depicted in the form of tables, bar diagrams & pie diagrams. The chi-square test was used to assess the data for significance. SPSS was used for data analysis.

5. Results

There were 127 kids' total—82 boys and 45 girls, 73% of the 110 children with infectious dermatoses were hostels dwellers; they were primarily from rural areas and belonged to low (55.2%), middle (43.23%), and high (1.58%) socioeconomic classes. Bullous impetigo (11.02%) was the most prevalent infectious dermatoses in preschoolers, whereas genital scabies (25.19%), tinea cruris

(9.44%), and molluscum contagiosum (3.93%) were the most frequent in teenagers. Seventy-three percent of the seventeen children with non-infectious genital dermatoses come from low-income families. Genital vitiligo affected 0.79% of the population, phrynoderma (0.79) and zinc deficiencies (1.57%) affected 2.36%. The remaining non-infective dermatoses identified were hemangiomas, lichen planus, striatus, and nevi.

Except for toddlers, male children are the most involved throughout all age groups. Based on the SAL, which is employed in the National Family Health Survey (NFHS-2).[3] (Figure 2)

Of all the patients, 110 (86.61%) were of infective etiologies.

Parasitic Infestations: The most frequent infective dermatoses was determined to be genital scabies (34.4%), which was followed by scabies with a super added infection (9.44%).

Bacterial Infections: Folliculitis (1.577%) was the second most common bacterial illness, after bullous impetigo (11.02%).

Fungal Infections: the most prevalent fungal infections were Tinea cruris (9.44%) and candidal intertrigo (7.87%). 14.96% of the cases had perianal dermatitis.

Viral infections: Molluscum contagiosum was detected 3.93% of the time among viral infections, compared to 1.57% of viral warts.

13.39% (17) of all patients had non-infective dermatoses. The most prevalent condition was eczema (3.14%), which was followed by psoriasis (1,57%), lichen planus (1.57%), and acrodermatitis enteropathica (1.57%). Haemangioma (0.79%), epidermal nevi (0.79%), and phrynoderma (0.79%) were the next most frequent conditions

5.1. Infective dermatoses and epidemiological relation with

5.1.1. Age

Among those aged 9 to 18, genital scabies and scabies with secondary infection were the most prevalent infective genital dermatoses, followed by bullous impetigo in preschoolers and tinea cruris in teenagers.

5.1.2. Sex

In boys, genital scabies and scabies with secondary infection were more prevalent, whereas in girls, scabies with secondary infection, bullous impetigo, and candidal intertrigo were more common.

5.1.3. Socioeconomic status

Genital scabies and tinea cruris were the most frequent infections in children from poor socioeconomic backgrounds. Genital scabies prevalence was highest.

5.1.4. Domicile

Bullous impetigo and genital scabies were the most prevalent dermatoses among semi-urban children, while genital scabies was the most common dermatoses in children living in rural areas.

5.1.5. Clothing habits

Out of 173 children with infective dermatoses, 96% had the habit of wearing undergarments

5.2. Non infectious dermatoses and epidemiological relation with

5.2.1. Age

Of all the age groups in our analysis, eczema was the most prevalent non-infectious dermatoses, with the exception of phrynoderma in the 6–9 year age group.

5.2.2. Sex

The most prevalent non-infective dermatoses in children who were male was phrynoderma. The majority of cases of eczema occurred in female infants.

5.2.3. Socioeconomic status

In children from lower socioeconomic classes, phrynoderma and acrodematitis enteropathica were the most prevalent non-infective dermatoses, whereas eczema was more common in middle-class children.

5.2.4. Domicile

In semi-urban areas, eczema is more prevalent than nutritional dermatoses as non-infective dermatoses in children living in rural areas. All children with non-infective dermatoses were non-residents of hostel.

5.2.5. Clothing habits

70.89% of the 17 kids with non-infectious dermatoses was wearing undergarments. Of those, 40% were using diaper and 29.11% were not using undergarments.

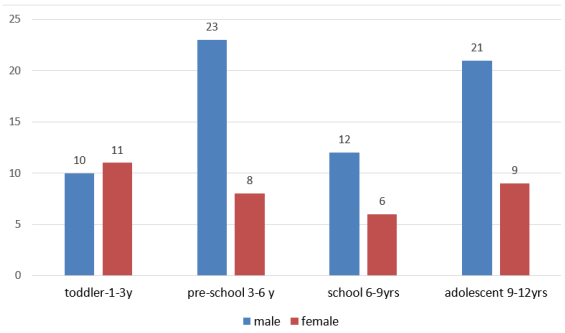

Figure 1: Age and gender distribution

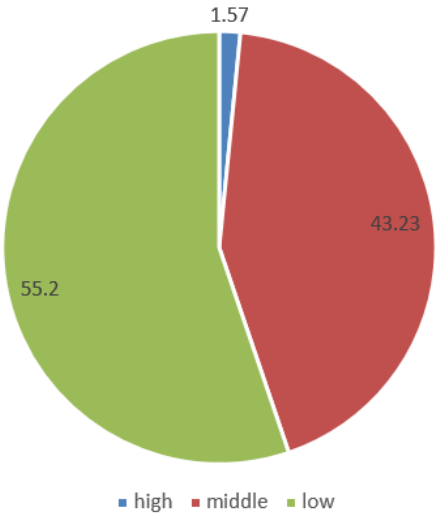

Figure 2: Socio economic status and gentital dermatoses.

Figure 3: Showing atopic dermatitis

Figure 4: Showing nodular scabies

Figure 5: Showing genital psoriasis

Figure 6: Showing infantile seborrheic dermatitis

6. Discussion

Dermatoses are more likely to occur on pediatric skin.[4] Genital dermatoses in children may be a sign of general hygiene, cleanliness, and health.[5] There is a strong correlation between dermatoses and food, environment, climate, and socioeconomic status.[6] Among school-aged children, communicable diseases such as bacterial and fungal infections, parasite infestations, are more prevalent.[7] Pyoderma is frequently linked to hot, muggy environments as well as inadequate personal cleanliness.[8] Different nations and areas within a same nation have different prevalance skin problems because of things like environment, culture, socioeconomic level, and different religious beliefs.[9] In our study, 110 (86.5%) of the 127 youngsters had infectious dermatoses, whereas 13%

Table 1: Enumerating infective dermatoses

Infective dermatosis	Number of cases	Percentage
Parasitic		
Genital scabies	32	25.19
Secondary infection with scabies	12	9.44
Papular urticarial	2	1.57
Bacterial		
Bullous impetigo	14	11.02
Folliculitis	2	1.57
Fungal		
Tinea cruris	12	9.44
Candidal intertrigo	10	7.87
Peri-anal dermatitis	19	14.96
Viral		
Viral wart	2	1.57
Molluscum contagiosum	5	3.93
total	110	86.61

Table 2: Enumerating non-infective dermatoses.

Non-Infective Dermatosis	Number of Cases	Percentage
Inflammatory		
Genital psoriasis	2	1.57
Eczema	4	3.14
Lichen planus	2	1.57
Lichen sclerosus	1	0.79
Congenital		
Melanocytic nevi	1	0.79
Epidermal nevi	1	0.79
Vascular nevi	1	0.79
Nutritional		
Phrynoderma	1	0.79
Acrodermatitis enteropathica	2	1.57
Autoimmune		
Vitiligo	1	0.79
Total	17	13%

had non-infective dermatoses. According to a research[10] infections were noticeably more common among children and teenagers ,which is similar to our study.

In their research, Karthikeyan K et al.[6] discovered 54.5% of infections and infestations. Infectious dermatoses accounted for 50.9% of the study conducted by K.S. Negi et al. (2010), but non-infective and nutritional deficiency dermatoses were observed in 31.6% and 17.5% of cases, respectively.[11] The hot humid climate in majority of the months in silchar, less awareness about hygiene practices, more number of siblings and lack of attention to upbringing and toilet training of each child, among low socioeconomic strata might be a reason for infective dermatoses to supercede non-infective ones in our study. Parasitic infestations like scabies are more prevalent in local religious hostel dwellers of madrasa , and due to overcrowding, poor hygiene, sharing of clothes, susceptibility & easy transmissibility, there is increased chances of transmission to other children both in hostels and to siblings at home.

In the present study, out of 127 cases,scabies (34.66%) was found to be the most common dermatoses among all the other infective dermatoses.

Genital scabies was seen in 25.19% and scabies with secondary infections in 9.44%.of cases. The predominant age group where scabies was prevalent is adolescents. It was observed less among toddlers. This might be due to increased exposure with other children suffering from scabies infestation in adolescents. Scabies was seen in 34.66% of the total cases (127), of which majority of the cases were seen in male children (68.18%) compared to female (31.81%).

Secondary infections in scabies are also higher among boys than girls. Among the infective dermatoses, scabies is seen more in children in families with middle and low socioeconomic class children. Majority of children with genital scabies are from the rural areas. This is due to poor hygiene, increased susceptibility and increased prevalence of scabies in rural community. 25% of the children with genital scabies are non-hostelites and 75% are hostelites. In the present study, out of 127 children, bacterial infections are 12.59%, bullous impetigo is 11.02% followed by folliculitis (1.57%) respectively. K.S. Negi et al[11] in his study found that pyoderma (15.4%). found bacterial infections 27.39% in his study. Gosh SK et al[12] found that pyoderma, was the most common skin disease (35.6%), which differ from the present study. This is because the pattern of skin diseases varies from region to region which is attributed to differing climatic, cultural and socio-economic factors.[13] In the present study, bacterial infections are common among pre-school children, Majority of the bacterial genital infections are found in male children compared to female children.[14] Bacterial infections are more common among children of low socioeconomic class than middle socioeconomic class. Most common bacterial infection found was bullous impetigo and folliculitis in children from rural and semi urban children respectively.

Fungal infections: among fungal infections, the most common was tinea cruris (9.44%) followed by candidal intertrigo (7.87%) and perianal dermatitis (19%). Sardana K et al[9] found 4.65% of fungal infections in his study which is much less than our study. Majority of fungal infections were seen in the toddlers age group with the exception of tinea cruris which was found mostly in adolescent age group. Fungal infections were found more in female children than in male. Fungal infections were found more in children belonging to low socioeconomic class than of middle socioeconomic class.[15]

Viral infections: Among viral infections, Molluscum contagiosum was more frequently found (1.57%) than viral warts (3.93%). In Ghosh SK et al[12] study Molluscum

contagiosum was found in 4.6% of the children which is correlating with our study in the current study, toddlers accounted for 1.74 percent of cases of viral infections, and all of the cases were male. Our study's 5.5% finding of viral infections correlates with that of Sardana K et al[9] 3.88%. Children from middle-class socioeconomic backgrounds accounted for 3.47% of viral infections. The majority of youngsters (3.47%) who have viral illnesses come from rural communities. Non-infectious Dermatoses of all: Of all the patients, 17 (13.38%) had non-infective dermatoses. The most prevalent kind of genital dermatoses was eczema, which was followed in frequency by genital psoriasis (1.57), lichen planus (1.57%), lichen sclerosus (0.79%), nevi (2.37) and nutritional dermatoses (2.36%). Pityriasis alba was identified by Sardana K et al.[3] at 5.85% in their investigation, compared to 1% in ours. In their study, Karthikeyan K et al.[6] discovered that 2.8% of dermatoses were linked to dietary deficiencies. The results reported in the study of K.S. Negi et al.[10] on pityriasis alba (10.4%) and eczema (8.1%) do not align with our research. Of the 17 kids with non-infective dermatoses, preschoolers and adolescents make up 29.60% of the group, while school-age kids make up 25.90%. In the current study, male children had a higher percentage of non-infective dermatoses (55.56%) compared to female children (44.44%). Children from lower socioeconomic classes were more likely (75%) to have non-infective dermatoses than those from middle socioeconomic classes (25%). T70.07% of them were from rural population and 29.93% from semi-urban population.

7. Conclusion

This study leads us to the conclusion that school-going children have an increased risk of bacterial illnesses, fungal infections, scabies, and nutritional deficits. This result is in agreement with poor health, crowded living conditions, inadequate personal hygiene training during childhood, and limited access to soaps and antifungal medications. Our study suggests that improving health education toilet training and nutrition for both parents and children might help prevent most of the genital dermatoses in children.

8. Abbreviationsnon venereal

SES- Socio Economic Status; SAL-Standard of living index; NFHS-2-National Family Health Survey.

9. Source of Funding

None.

10. Conflict of Interest

None.

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