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A STUDY ON CLINICAL PATTERNS OF CUTANEOUS INFECTIONS AND INFESTATIONS IN SCHOOL GOING CHILDREN

Dermatology

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ABSTRACT

Skin conditions are a noteworthy medical problem in the pediatric age and are associated with increased morbidity. Cutaneous infections and ,infestations are common in children during school going age as there is expanded odds of cross transmission among themselves and to their families.

AIM : To document the various clinical patterns of cutaneous .infections and .infestations among the children of school going age and to describe the disease distribution according to various factors like age, sex, socioeconomic status and seasonal variations.

MATERIALS AND METHODS: 188 Children of 5-16 years of age diagnosed to be having a cutaneous infection/infestation at Dermatology OPD, Jalappa Hospital from Jan 2018 to July 2019 were included after obtaining informed written consent from parent/ guardian.

RESULTS: Out of the total 188 cases, parasitic infestations (38.29%) were the most predominant among all infestations and infections followed by bacterial (21.80%), fungal (20.21%), and viral (19.68%). All types of infections were common in the age group of 10-14 years (38.29%), and in male population. Majority of patients belonged to lower middle class (34.57%). The bacterial infections (46.34%) and parasitic infestations (47.22%) were predominant in summer, fungal (36.84%) and viral (37.83%) infections were common during monsoon and winter respectively.

CONCLUSION: The family members of the child has to be properly counselled and awareness to be created among the same regarding the hygiene, proper nutrition, immunisation to reduce the incidence of infections/infestations.

KEYWORDS

school going, cutaneous, infections, infestations, season.

INTRODUCTION

Skin conditions are a noteworthy medical problem in the school going age and are associated with increased morbidity. Skin infections involving children accounts up to 30% of all visit to dermatology department.[1]

Infection and infestation are most common skin manifestations seen in children. The skin manifestations varies from person to person depending on lack of awareness among the guardians, educational and financial status of the family, overcrowding, malnutrition, climatic changes or conventional taboos.[3,4]

The greater part of these cutaneous dermatoses can be constrained by adequate counseling, appropriate sanitation, improving nourishment and required medications at the grass root level. Cutaneous infections and infestations are common in children during school going age as there is expanded odds of cross transmission among themselves and to their families.

MATERIALS AND METHODS

188 Children of 5-16 Years of age diagnosed with cutaneous infection/infestation attending outpatient clinic of Dermatology ,Venereology and Leprosy in R L Jalappa Hospital and Research centre, Tamaka, Kolar from Jan 2018 to July 2019 were included except patients presenting secondary to acquired immunosupression.

Data was collected after obtaining informed written consent from parent/ guardian. This study is a hospital based observational cross sectional study.

Those children enrolled in the study were evaluated based on a detailed clinical history including onset and evolution of lesion, socio-economic factors , environmental background, overcrowding, hygiene and immunization status, family history and seasonal exacerbations. A thorough clinical examination and relevant laboratory investigations were done wherever necessary. The patients were divided into three age groups- 5 -8, 9- 12 and 13-16 years and the socioeconomic status of the family was assessed based on the Modified Kuppuswamy socioeconomic scale. The data thus collected were entered in to a specially designed Case Record Form and subjected to statistical analysis ,and entered into Microsoft excel data sheet and was analyzed using SPSS 22 version software. P value < 0.05 was considered statistically significant. IBM SPSS version 22 was used for statistical analysis.

RESULTS

Of the total 188 patients , 123 cases were boys (65.42%) and 65 girls (34.7%). Among them, 61.70% patients had infective dermatoses and 38.29% had infestations.

The most common age group involved was 9-12 years(38.29%) followed by 5-8 years (33.51%) and least involved age group was 13-16 years (28.19%). 9-12 years age group had predominant viral infections (45.94%), followed by fungal and parasitic infestations as 42.10% and 34.72% respectively, where as age group 5-8 years had the highest incidence (48.78%) of bacterial infections.

All types of infections/infestations were predominantly involving boys (65.42%) compared to girls (35.47%) , among which bacterial was the predominant infection in males, and parasitic infestations was predominant among females.

The bacterial infections (46.34%) and parasitic infestations (47.22%) were predominant in summer, fungal (36.84%) in monsoon and viral (37.83%) in winter.

Most patients belonged to lower middle class family, with viral and fungal infections more common in upper lower class with 30.35% and 43.75% involvement respectively.

86.11% of patients who had parasitic infestations had overcrowding in their families. The disease prevalence was more in the houses with single rooms.

The occurrence of infections /infestations in the sample size was increased among the children who had poor hygienic practices with fungal (36.84%) ,parasitic (36.11%), bacterial(31.70%) and viral(13.51%) infections.

There was a predominant involvement of children who were not adequately immunized with 65.85%, 81.08% , 42.10%, and 45.83% of bacterial, viral, fungal and parasitic infections respectively. There was

a statistically significant correlation between the individual's immune status and the incidence of infections / infestations.

Among bacterial infections, commonest was impetigo (34.14%) followed by folliculitis (21.95%). (Table 1, figure 1)

Table 1 : Distribution Of Bacterial Infections Among The Study Population.

Bacterial infection	Frequency	Percentage
Folliculitis	09	21.95%
Ecthyma	01	2.43%
Impetigo contagiosa	14	34.14%
Bullous impetigo	05	12.19%
Furunculosis	04	9.75%
TT-Hansens disease	01	2.43%
BT-Hansens disease	01	2.43%
Infective eczema	03	7.31%
Abscess	02	4.87%
Pityrosporum folliculitis	01	2.43%
Total	41	100%

Figure 1: Impetigo With Honey Colored Crusts

Among viral infections, commonest was verruca (62.16%) followed by molluscum contagiosum (10.81%), varicella and herpes zoster (8.10%), and others. (figure 2, figure 3)

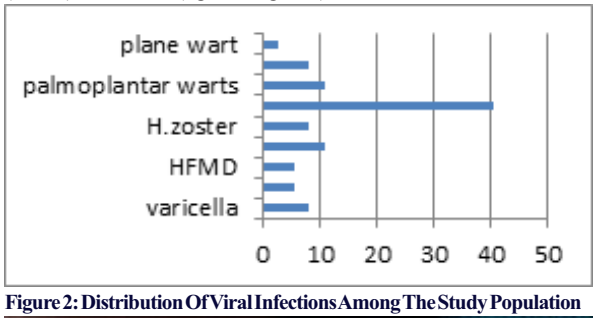

Figure 2: Distribution Of Viral Infections Among The Study Population

Figure 3 : Palmar Warts

The major component among fungal infections were dermatophytosis, in which tinea corporis was major contribution (50%) followed by T. cruris (23.68%). (figure 4, figure 5)

The most common parasitic infestations scabies (94.44%), followed by pediculosis (5.55%). (Table 2, figure 6)

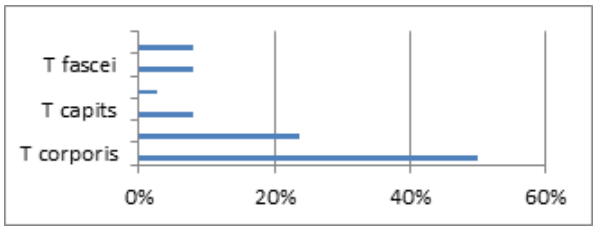

Figure 4: Distribution Of Fungal Infections Among The Study Population

Figure 5: Annular Lesions Of Tinea Corporis

Table 2: Distribution Of Parasitic Infestations Among The Study Population

Parasitic infestation	Number	Percentage
Scabies	68	94.44%
Pediculosis capitis	4	5.55%
Total	72	100%

Figure 6: Webspace Involvement In Scabies

DISCUSSION

Climatic factors, external environmental factors, dietary habits and nutrition, and socioeconomic status influence the pattern or trend among skin diseases in children. This present study was hence undertaken with an objective to know the clinical profile and trend of cutaneous infections/infestations in school going children.

A previous study have shown a predominance of infectious dermatoses among the age group of 5 to 7 years (83.3%)[7]. However, our study showed age group 9 - 12 (38.29%) to be more involved than 5-8 ages (33.51%). This might be due to the reason that children become more independent in performing their self hygiene practices as they grow

older and parental care decreases in this aspect, which in turn can lead to an increased incidence of skin diseases among them. Increased outdoor exposure in the school may enhance chances of acquiring infestations[6].

Our study had a predominance of boys with 65.42% which was similar to another study but in contrast to a different study where girls were more involved with 87.3%.Gender based analysis has shown a commoner involvement of pediculosis capitis among girls than in boys according to previous studies.[6,7]

In this study, according to the Modified Kuppuswamy socioeconomic scale, most of patients were from the lower middle class (34.57%) followed by upper lower class (29.78%). However, most of the patients in other studies belonged to the middle class followed by upper lower[1].Lower SES may contribute to poor nutrition leading to lower immunity status and there by precipitate skin infections [3,11] . Lower classes of socioeconomic status are more predisposed to poor hygiene, overcrowding, low sanitation facilities, which make them prone for increased infections and infestations. The prevalence of transmissible diseases increases classically with decrease in the socioeconomic status[13].

In the present study, the number of infective dermatoses were more in summer (55.26%) whereas infestations (57.62%) were at peak during winter. The climatic factors which influences the development of a skin disease includes heat, humidity, duration and intensity of sun exposure. The hot and humid climate predisposed to development of pyodermas. Insects are vectors of the causative agents of infections in humid conditions.[7]

In a family size of more than four, common infections observed were parasitic (73.61%), fungal (65.78%), bacterial (60.97%), viral (54.07%) similar to another study which showed the prevalence of infections more in family size of 4 to 6 members(82%)[7]. This was suggestive that overcrowding is the significant risk factor for the increased prevalence of infections and infestations which eventually leads to the contagiousness of the disease[12]. Also, there was a predominant involvement of infections/infestations among the children who were not adequately immunized with 65.85%, 81.08%, 42.10% and 45.83% of bacterial, viral, fungal and parasitic infestations respectively and showed a statistically significant association. This implies the importance of adequate immunization in childhood.

We observed that infections (61.70%) were prevalent more than infestations (38.29%). The higher prevalence of bacterial infections in rural area is contributed by factors like Low literacy rate, poor hygiene /sanitary conditions, lack of awareness, malnutrition, overcrowding, low hygiene , poverty and diminished health services for the skin diseases.

Among the viral infections, verruca (62.16 percent) was the most prevalent similar to two previous studies[2,10]. However, in another study varicella (5.9%) was the most common presentation[1]. Infection spreads by blood, sputum, and nasal discharge by droplet infection. Therefore, viral skin infections varied in different ratios in different studies which indicate the disparity in geographical location and socioeconomic strata. Children may be favored by barefoot walking for maceration and trauma as it may predispose to development of warts[1].

In our research, tinea corporis (50%) were the most frequent manifestations among fungal infections similar to another study[10]. However , a different study revealed a predominance of tinea corporis (43%) [6]. When fungal culture was done for relevant patients, Trichophyton mentagrophytes were the predominant species which was isolated, in accordance with a previous study [9]. Pityriasis versicolor's lower occurence may be due to sebaceous gland inactivity in the pediatric age group. Overcrowding can predispose to superficial fungal infections due to increased risk of transmission by direct contact. Tinea capitis can spread by sharing of contaminated combs, brushes, hats, and pillows.

Among the parasitic infestations, predominant involvement was by scabies (94.44%) followed by pediculosis (5.55%) similar to other studies whereas, a different study showed pediculosis (42%) was commoner than scabies(1.5%)[6,7]. Close physical contact as in overcrowding, poor hygiene, lower socioeconomic status, family history, lack of awareness can all lead to the contagiousnesss of scabies. Children can act as the vectors of transmission of the disease from schools to familes. Scabies is also considered as a risk factor for pyodermas due to secondary infection[15]. Pediculosis capitis is most commonly seen among girls, which is attributed to the long length of hair in females, poor grooming and sharing of combs.

The long term sequelae of infections/infestations like osteomyelitis, septic arthritis, pneumonia, meningitis, post streptococcal glomerulonephritis, meningitis, encephalitis, hepatitis can impair the quality of life and increases the morbidity among the affected children. This implies the importance of early diagnosis and treatment of the same.

CONCLUSION:

Overcrowding, lower socioeconomic status, unhygienic environment , malnutrition, poor immunization status, geographical area , season, and other environmental factors are the predisposing factors for cutaneous infection/infestations among school going children. A good primary health care setup helps in alleviating the morbidity associated with cutaneous infection/infestations. The family members/ guardian/ school teachers of children has to be properly counselled, and awareness has to be created among the same regarding the hygiene, proper nutrition, immunization to reduce the incidence of infections/ infestations. Early diagnosis and treatment of the diseases help reducing the incidence of long term complications and hence morbidity.

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