



Clinical Classification of Superficial Fungal Infections in A Paediatric Age Group

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ABSTRACT:

Background: Superficial fungal infections are characterized by fungal infection of keratinized tissue such as hair, nails and skin. Superficial fungal infections are common in children more so with overcrowding and poor hygienic conditions.

Aims and Objectives: The objective of this study was to study the epidemiology, identify the pattern and the hygienic conditions associated with fungal infections in children.

Materials and methods: This was a Observational prospective study done on all cases presenting with features characteristic of superficial fungal infections. A total of 156 patients were included in the study. A 10% KOH Mount was done in all patients for fungal elements.

Results: Males were more commonly affected than females with a male to female ratio of 1.6:1. Tinea corporis was the most common type of infection(36%). Poor hygienic conditions was observed in majority of the patients.

Conclusions: Fungal infections are common in the paediatric age group. All the body parts can be affected. The importance of hygiene has to be stressed in terms of taking bath regularly, wearing of fresh loose cotton clothes and maintainance of environmental cleanliness.

INTRODUCTION

Superficial fungal infections include dermatophytosis, onychomycosis, Tinea versicolor, and hair infections. Fungal infections occur at all age groups and there has been a recent increase in the pediatric age group¹. The skin of children is different from adults. A child is not just a small adult but has different pathophysiologies which influence the nature of skin infections^{2,3}. This study also highlights the importance of hygiene in the pathogenesis of superficial skin infections. This study also highlights the magnitude of superficial fungal infections in the paediatric age group that a dermatologist and a general physician has to face in society.

AIMS AND OBJECTIVES

This study was carried out to study the frequency of different superficial fungal infections in the Paediatric age group. To study the 10 % KOH mount positivity in patients suspected to have fungal infections. To study the fabric of clothes that patients presenting with fungal infection wear. To study the hygienic practices of patients

such as frequency of taking bath. To study the area of residence in order to assess if there is overcrowding and unclean environmental conditions.

METHODS

This is a observational study carried out in a government hospital in South India. The study was carried out between January 2021-August 2023 in Civil Hospital, Dharwad. Clinical type of fungal infection was documented and lesional scrapings were sent for KOH Mount examination. Details of hygiene such as the frequency of taking bath, wearing of freshly washed clothes, type of clothing material was taken as well as area of residence

Inclusion criteria

Patients between the age group of 5 days to 15 years of age who were suspected to have superficial fungal infections were included in the study.



Exclusion criteria

Patients who had applied antifungal creams or any steroid creams to their lesions prior to presenting to us were excluded.

RESULTS

A total of 156 were included for the study. The most frequent age group with superficial fungal infections was the adolescent age group. The age group of birth to 4 years has the least infection rates.

Table 1: Age distribution of infection

Age	Frequency(n)/%
0-4 months	4 2.5%
4 months-1 years	12 7.6%
1-4 years	15 9.6%
5-8 years	26 16.6%
8-11 years	45 28.8%
12-15	54 34.6%

Sex Distribution

Male(n-96,61.53%) were commonly affected than females(n-60,38.46%)

Table 2: Type of superficial fungal infection Frequency(n)/percentage

Candidiasis	4 2.5%
Tinea versicolor	11 7.0%
Tinea capitis	14 8.9%
Tinea Faciei	12 7.6%
Tinea Manuum	8 5.1%
Tinea pedis	6 3.8%
Tinea cruris	32 20.5%
Tinea corporis	57 36.5%
Onychomycosis	12 7.6%
Finger Nails	7 4.4%
Toe nails	5 3.2%

The most frequent site of fungal infections was tinea corporis 57 cases(36.5%). Among the tinea corporis group the most frequent affected body part was the

buttock 18 cases (11.5%) and the least common site was the neck abdomen with 4 cases (2.5%) each.

Table 3: Body part affected in tinea corporis.

Body part	Frequency(n)/Percentage
Neck	4 2.5%
Chest	7 4.4%
Abdomen	4 2.5%
Arms	5 3.2%
Trunk	13 8.3%
Buttocks	18 11.5%
legs	6 3.8%

Tinea cruris was seen in 32 cases (20.5%). Tinea capitis was seen in 14(8.9%) cases. Tineafaciei was seen in 12 (7.6%) cases. Tineamanuum was seen in 8 (5.8%) cases. Tineapedis was seen in 6 (3.8%) cases. Tinea versicolor was seen in 11 cases(7.0%).

Onychomycosis was seen in 12 cases (7.6%) with finger nails being affected in 7 (4.4%) cases and toe nails being affected in 5(3.2%) cases.

Candidiasis was seen in infants. Three were cases of vaginal candidiasis and one had intertrigo of the neck

Table 3: Hygienic Practices Frequency(n)/percentage

Bathing	
Everyday	59 37.6%
Alternate days	26 16.6%
One in 3 days	33 21.1%
Once a week	17 10.8%
Once in 2 weeks	10 6.4%
Once a month	11 7.0%
Fabric of clothes	
Cotton	37 23.71%
Others	119 76.28%

Most of the patients used to take bath everyday 79 cases(50.6%). With 11 (7.0%) patients taking bath once a month. Majority of the patients wore non cotton fabric clothes (76.25%) with only 37 (23.7%) patients wearing cotton clothes.

**Table 4: Place of residence Frequency/Percentage**

Slums	88(56.4%)
Semi urban	43(27.5%)
Urban	25(16.0%)

Majority of the patients were from slums(56.4%) where there is overcrowding poor access to water and electricity.

DISCUSSION

The number of males was more in our study, this comparable to the study by Rathod *et al.*¹, Ray *et al.*⁴, Lal *et al.*⁵ and Rgip *et al.*⁶. The most common age group affected was adolescents comparable to the study by Conde SH *et al.*⁷.

Tinea corporis was the most common observed pattern comparable to study by Satheesh *et al.*⁸, Gadwik *et al.*⁹ and Ray *et al.*⁴.

Tinea capitis was seen in 14 patients (8.9%), this is less than the study by Ezomike NE *et al.*¹⁰ and Sellami *et al.*¹¹ where it was the most common fungal infection.

Tinea Faciei observed in our study (7.6%) was less than that observed by Gawdzik(22.2%)⁹.

In our study Tinea Pedis was observed in 6 cases (3.8%). This is less than the study by Juan Medina Flores¹² where it was observed in 62% of patients. This is comparable to the study by Gawdzik⁹ where it was seen in 2.78% of patients.

Onychomycosis was observed in 12 cases (7.6%). This is less than the study by Juan medina Flores¹² and Gawdzik⁹ where it was seen in 24 % of cases and 17% respectively. It was also less than the study by Conde SH *et al.*⁷ where it was the most common fungal infection (57%).

Tinea versicolor was seen in 11 cases (7.0%). This is more than the study by Conde *et al.* where only 2 cases (0.17%) were seen. This is less than the Juan Medina Flores¹² where it was seen in 10.8% and Deepak Jena (31%)³. The most common site of Pityriasis versicolor in our study was the face. This is comparable to the study by Deepak Jena¹³.

Candidiasis was seen in 2.5% of patients comparable to the study by A Saumara (2.5%)¹⁴. Poor Hygiene was seen in 62% of patients which is comparable to the study by Ray *et al.*⁴.

KOH Mount was positive for fungal elements in 85% of patients. This is more than the study by Juan Medina flores where it was seen in 64% of cases¹².

CONCLUSIONS

The results of this study notes the frequency of different types of fungal infections in the paediatric age group. We observed that majority of the patients were associated with poor hygienic conditions in terms of the clothes they wore and bathing frequency that predispose to fungal infection. Further studies on dermatophytoses are required to shed light on emerging trends in paediatric fungal infections which maybe caused by migration and changing lifestyle.

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