

Short Communication

CLINICO-MYCOLOGICAL PROFILE OF DERMATOPHYTIC INFECTIONS

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ABSTRACT

Objective: The objective of this study was to isolate and identify the dermatophytic infected patients attending Perundurai IRT Medical College and Hospital, Erode.

Methods: The samples of skin, nail and hair from patients having the sign of superficial mycoses were gathered over a period of one year. The clinical material was examined microscopically by KOH mount and the culture was done on Sabouraud dextrose agar, Potato dextrose agar Dermatophyte test agar medium and incubated at 28-30 °C.

Results: The demographic data shows that the men (82%) were highly susceptible to the infection; the infected age group is between 15-30 y (74%). In that students, (28%) were highly exposed to Tinea corporis and Tinea cruris infection.

Conclusion: The results of the study suggested that the preliminary information on the prevalence and distribution of dermatophytes in the area of sampling. So the knowledge of the efficient screening, management, reduction and treatment of the dermatophytic infection should be fruitful in the future.

Keywords: Skin, KOH mount, Dermatophyte test medium (DTM), Tinea cruris

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Skin infections are the most common infection occurring in developing countries, of which dermatophytosis are of particular concern in the tropics. Dermatophytes are parasitic fungi that infect and cause infections of the skin, hair and nails because of their ability to obtain nutrients from keratinized material. Due to the colonization of the moulds, the host immune system experiences inflammatory reactions were responsive to their metabolic by-products [1]. Infections caused by these fungi are also known as "Tinea" and "Ringworm." It is important to emphasize that "ringworm" is not caused by a worm, but rather by the type of fungus called Dermatophyte [2]. Clinically, ringworm can be classified depending on the site involved. These include Tinea capitis (scalp), Tinea corporis (non-hairy skin of the body), Tinea cruris (groin), Tinea pedis (foot) or athlete's foot and Tinea barbae or barber's itch (bearded areas of the face and neck). Favus is a type of ringworm involving the hair follicles [3]. Sex, race, and occupation have little recognized differential influence upon the frequency of dermatophytosis [4]. Among the literature survey, very few studies have been reported on the etiological profile from Tamil Nadu when compared to different parts of India. Also, the studies of the predominating species in a particular region and its relation with various factors affecting its distribution are of considerable importance in implementing proper preventive measures and arresting the spread of infection. Hence, in the current study, a mycological clinic approach, correlating with demographic data such as age and sex with the identification of the fungus using standard techniques.

A total of 130 consecutive patients with skin lesions resembling tinea attending Perundurai IRT Medical College and Hospital, Erode Tamilnadu were taken for the study over a period of one year. The institutional ethical clearance and constantly informed form were obtained prior to the study. A detailed clinical history of selected cases was taken in relation to name, age, sex, address, occupation, and duration of illness. Samples were collected from the site of the lesion. Scrapings were taken with a blunt sterilized scalpel from the active site of the lesion using standard technique [5]. Direct microscopic examination of the skin scraping placed on the microscopic slide with one or two drops of 20% potassium hydroxide (KOH). The sample was warmed for 5 min over a flame. Each treated slide was then carefully examined under low (10X) and

high (40X) power objective for the presence of hyphae and/or arthroconidia. Following direct microscopic examination, the scrapings were inoculated onto different culture medium Sabouraud's dextrose agar with chloramphenicol and cycloheximide, Potato dextrose agar and Dermatophyte test medium and incubated at 28-30 °C. The cultures were examined for every two days for a period of one month for the presence of growth. The growths obtained were identified based on colony morphology, microscopic appearance and examined for gross morphology, pigmentation. Slide culture was performed to identify the isolates up to species level.

A total of 130 clinically suspected of superficial mycosis were enrolled in the study, comprising 112 (86%) male and 18 (14%) female (fig. 1).

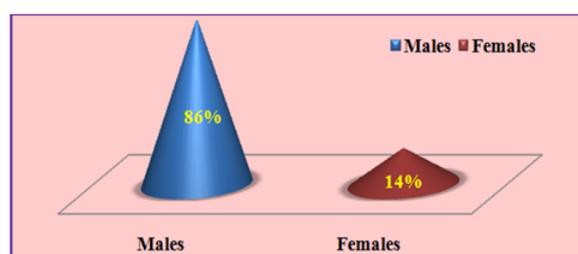


Fig. 1: Gender wise incidences of the patients

Higher incidence of dermatophytes in male than females and ratio was 5:2. The patients with all age groups were categorized into 0-15 y to 60 y and above in groups of 15 y gap; it was found that the maximum incidence (53%) was observed in the age group of 15 to 30 y (table 1).

Table 1: Age-wise distribution of patients with dermatophytosis

S. No.	Age (years)	Number of cases	Percentage
1	0-15	3	2
2	15-30	69	53
3	30-45	36	28
4	Above 45	22	17
Total		130	

Among all the cases, infections at various sites in the body including the scalp, groin, thighs, face, hands, nails, full body, hips and cheek, the maximum infection were recovered from groin followed by skin, cheek and hand. In the occupational status of the patients, students were highly susceptible to the skin infection followed by daily-wage laborers, housewife, drivers and conductors, company workers and tailors. The least common group infected was retired persons and farmers (fig. 2).

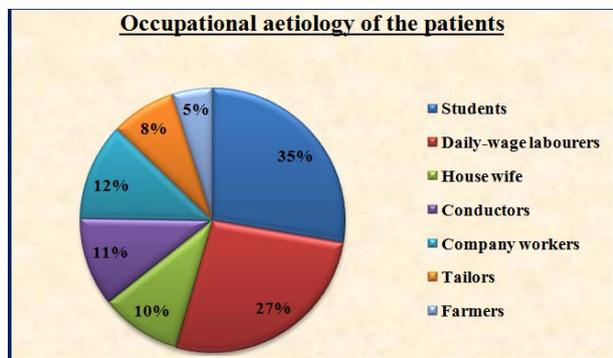


Fig. 2: Occupational aetiology of skin infected patients

Tinea cruris was the predominant infection in the present study occurring in 45 (35%) patients followed by *Tinea corporis*, *Tinea barbae*, *Tinea faciei*, *Tinea manuum*, *Tinea capitis*, *Tinea pedis*, *Tinea unguium*, *Tinea gladiatorum* and mixed infection in 1 patient (table 2).

Table 2: Clinical types of dermatophytosis in this study

Clinical types	No. of cases	Percentage (%)
<i>Tinea cruris</i>	45	35
<i>Tinea corporis</i>	33	25
<i>Tinea barbae</i>	12	9.2
<i>Tinea faciei</i>	11	8.4
<i>Tinea manuum</i>	11	8.4
<i>Tinea gladiatorum</i>	8	6
<i>Tinea pedis</i>	4	3
<i>Tinea unguium</i>	4	3
<i>Tinea capitis</i>	1	1
T. cor+T. cru	1	1
Total	130	100

The epidemiology of superficial fungal infections has changed significantly in the last century and reflects changes in socioeconomic conditions, lifestyle, and migration. The study showed that males were predominantly affected than females. Male preponderance correlated with the occupational hazards related to their nature of work, the frequent interaction with different people in the society, environmental conditions such as hot and humid weather, poor personal hygiene and illiteracy are the major factors that influence dermatophytosis [6]. Persons of all ages were susceptible, but most of the cases of fungal infection incidence

(53%) were found in the age group of 15 to 30 y, followed by 30-45 y. This study was well correlated with reporting carried out by Sarma et al., 2007 [7]. Affected individuals of various occupational statuses were reported in this study. In that students group was predominantly affected when compared with other groups. In regarding the status, the students were more prevalent to the infection, due to the exchange of their clothes and do not wipe their wet body parts with care. The high incidence of *Tinea corporis* and *Tinea cruris* as concluded from this study was probably due to its symptomatic nature (pruritis) which leads the patient to seek medical advice. *Tinea cruris* was much more common in men than in women. The reason for this preference might be because men wear more occlusive clothing and were more physically active [8].

In conclusion, the infection was pronounced in males as compared to females due to their occupational hazards. The exchange of clothes and wet body conditions was recovered dermatophytic infection from the groin of students group. Thus, this study provided new insight into some demographical facilitator of dermatophytosis while also contributing to existing knowledge useful for the efficient screening, management, reduction and treatment of the dermatophytic infection.

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CONFLICT OF INTERESTS

All authors have none to declare

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