

A CLINICAL STUDY OF A SUPERFICIAL DERMATOPHYTIC INFECTION IN KANCHIPURAM

*Vignesh D¹, Sathya Priya Sankar², SelvaSudha³

Dept of Dermatology, Meenakshi Medical College Hospital & Research Institute , Kanchipuram

*Corresponding author email: d.vigneshdr@gmail.com

Date of submission: 7th March 2015; Date of Publication: 31st April 2015

ABSTRACT

Background: Dermatophytic infection is the most commonly seen skin disease in our dermatology OPD. Dermatophytic infection is commonly seen in trophic and subtrophic regions like India. This study is done to find out the commonest type of Dermatophyte seen in our dermatology OPD and the organism causing the dermatophytic infection. **Aims and objectives:** 1) To find out the commonest clinical type of Dermatophytic infection in our dermatology Out Patient department. 2) To correlate between the KOH mount, Culture positivity and Dermatophytic infection. **Materials and methods:** 50 patients of dermatophytosis attending the dermatology outpatient department of Meenakshi Medical College and Research Institute from January 2013 to January 2014 are included in our study. KOH mount and fungal culture was done for all the patients with Dermatophytic infection. **RESULTS:** Male are more commonly affected than females in dermatophytosis. 21-30 years age group is commonly affected although patients of all age can be affected by dermatophytosis. Tinea corporis is the commonest clinical type. T. rubrum is the commonest etiological agent isolated.

Key words: Tinea corporis, Dermatophytes, Fungal infection

INTRODUCTION

Dermatophytosis is a superficial fungal infection affecting the keratinized tissue. The infection is commonly known as 'tinea'. In olden days Romans thought the infection was caused by insects. [1]

Dermatophytes are defined as keratinophilic organisms that have the ability to invade hair, nails, and the skin of the living host. Common symptoms of tinea infection are itching, rashes, nail discolouration, hair loss, occurs with tinea capitis (mainly a disease of children.). Complications such as secondary infections can lead to symptoms.

Dermatophytes can be classified as following:

Kingdom: Fungi

Phylum: Ascomycota

Order: Onygenales

Genus: Arthroderma, Nannizia

Microsporum, Trichophyton, and Epidermophyton are the most common genera affecting hair, skin and nails.

Dermatophytes that can cause infection are T. rubrum, T. schoenleinii, T. tonsurans, T. violaceum, M. audouinii, E. floccosum etc.

These species can be found in soil, on humans and animals and they are named as Geophilic, Anthropophilic, Zoophilic respectively [2].

The Geophilic organisms have less virulence when compared to anthropophilic organisms [3, 4].

Diseases predisposing to fungal infection are Diabetes mellitus, Lymphomas [5], Immunocompromised patients [6], Cushing diseases [7] etc.

Dermatophytic infection affects various parts of body such as scalp, face, beard, body, groin, nails etc.

The fungal infection which affects scalp is known as Tinea capitis. It is more common in children, particularly boys are more commonly affected than girls [8]

The fungal infection affecting beard and moustache areas of the face is known as Tinea barbae, other names are barber itch's and tinea syphilis. Infection is more common in rural areas [9, 10]

The fungal infection affecting the glabrous skin is called as Tinea corporis, the variant of Tinea corporis is Tinea imbricata which is caused by T. concentricum. Tinea imbricata is inherited as an autosomal recessive trait [11].

The fungal infection of groin is known as Tinea cruris, other names are 'dhoti's itch or jock itch in India. Tinea cruris is common in warm and humid climate, especially monsoon condition [12].

The fungal infection of nail plate is called as Tinea unguium which accounts for more than 50% of nail disorders [13].

Aims and objectives:

- 1) To study the various clinical type of dermatophytic infection.
- 2) To correlate between KOH mount, Culture sensitivity and Dermatophytic infection.

MATERIALS AND METHODS

Patients with clinical features of dermatophytosis attending the outpatient Department of Dermatology, Meenakshi Medical College and Research Institute, between January 2013 and January 2014

Inclusion Criteria: All the patients with clinically diagnosed Dermatophytosis are included in study.

Patients of all the age group were included

Both sexes were included in the study

Exclusion Criteria: 1. Use of anti fungal therapy (oral as well as topical)

2. Presence of serious systemic disorders.

Prior to the study an informed consent was obtained from the patients and a standard ethical committee clearance was given by the Institutional ethical committee after which the study was carried.

Type of study: A Descriptive study

A detailed history was taken with emphasis on age, sex, occupation, site type and duration of symptoms, social economic status and personal hygiene, type of clothing, foot wear habit h/o trauma obesity housing were recorded.

A thorough cutaneous examination was conducted including that of hair and nails. Scrapings will be collected from active edge of lesion, with blunt edge of the sterile scalpel after cleaning with 70% alcohol to remove surface contaminants. The material will be subjected to direct microscopic examination for fungus after treating with 10% KOH for 20 minutes.

In tinea capitis, infected and lusterless hair were collected. Care was taken to collect the basal portion of the hair as the fungus was usually found in this area in tinea unguium, the affected nails were swabbed with 70% alcohol and nail clipping were taken. It was kept overnight in a bottle containing 20% KOH and subjected to direct microscopy. In case of subungual hyperkeratosis, sub-ungual debris was taken for direct examination under microscope.

The sample was stored in sterilized gauze to reduce bacterial contamination and was cultured in sabourads agar medium for identifying organism.

All results were recorded, tabulated and analyzed according to statistical proportion.

RESULTS

Sex distribution: Males are affected more than Females. 70% of the males are affected and 30% females are affected.

fungal infections are relatively less common in women, this is because women are less exposed to an environment conducive to the spread of organism. [1]

Age distribution: 40% of the patients in the age group of 21-30 years are affected followed by 36% in the age group of 31-40 followed by 4% in 10-20 years age group and 4% in 71-80 age groups.

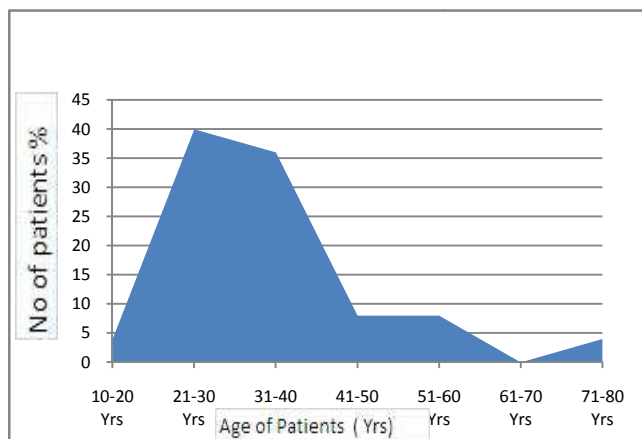


Fig 1: Age incidence

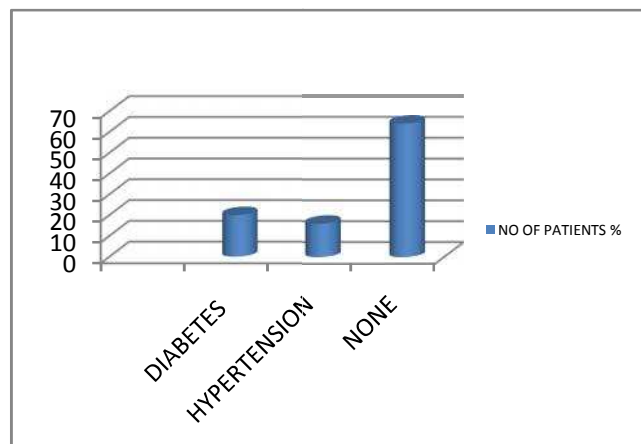


Fig 2: Comorbid illness

20% of patients in this study are affected with Diabetes mellitus followed by 16% of patients with Hypertension

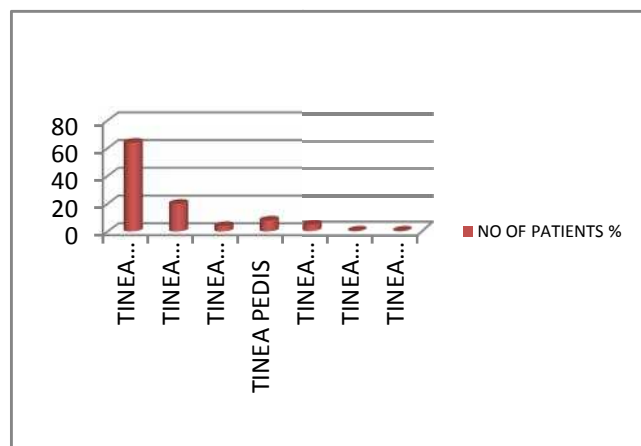


Fig 3: Clinical types of Dermatophytes

Clinical type of dermatophytosis: Tinea corporis is the commonest Type with 64% followed by 20% in Tinea cruris followed by Tineapedis, Tineabarbae, Tineafacies, Tineamannum, and Tinea capitis.

DISCUSSION

Of 50 patients included in the study, 42 patients showed positive sensitivity for fungal culture and 35% patients showed positive for T.rubrum followed T.mentographyte accounting for 25% followed by others.

Among the 50 patients diagnosed with dermatophytosis, our study showed a male predominance, accounting for 70% of the patients.

In a study performed by Damle as et al the male to female ratio being 4:1[14]. This possibly reflects greater contact of males with the contaminating sources in their working sites

Although all age group can be affected, the majority of patients in our study are in the 21 to 30 years accounting for 40% of the patients. Shah AK et al reported that the highest incidence of dermatophytosis was in the age group between 20-40 years.

In this study maximum number of patients were labourers (40%) followed students (22%) followed by housewives.

Tinea corporis was the most common clinical diagnosis made. (64%) of the (50) patients studied were diagnosed with Tinea Corporis. This observation is similar to the other studies done by Peerapur et al, conducted at Bijapur[15], where 102 clinically diagnosed patient's most common clinical pattern was of Tinea corporis with cruris, followed by Tinea cruris. In our study 80% of the total patients examined were positive by microscopy. In a study by Kamakar Seta fungus identification by KOH mount was positive in 86% cases. Microbiological confirmation of the species causing dermatophytosis is a very important in diagnosing the condition and finding the Etiological agent. *T. rubrum* was the most common species accounting for 35% followed by *T. mentagrophyte* identified on culture being positive by in 25 % of patients. Most studies from India however reported *Trichophyton rubrum* as the commonest organism.

Limitations: since patients were from rural village of Kanchipuram, follow up was not regular.

CONCLUSION

Male are more commonly affected than females in dermatophytosis. 21-30 years age group is commonly affected although patients of all age can be affected by dermatophytosis. Tinea corporis is the commonest clinical type, *T. rubrum* is the commonest etiological agent.

ACKNOWLEDGEMENT

It is with a sense of accomplishment that we dedicate our work to all those who have been instrumental in completion. We are thankful to our cooperative patient of our study, to our facility members and staffs of Meenakshi medical college, Kanchipuram for their support.

Conflict Of Interest: Nil

REFERENCES

1. R.G. valia, I ADVL text book of dermatology, Bhalani publishing house, 2001, third edition, :252-53.
2. Phipot CM, some aspects of epidemiology of tinea, mycopathologica, 1977, 62:3-13.
3. George LK, Epidemiology of dermatophytosis, source of infection, mode of transmission and epidemicity. Ann NYA Acad Sci, 1960; 89:69-77.
4. Jolly HW, carpenter CL. Oral glucose tolerance studies in recurrent *Trichophyton rubrum* infection, Arch Dermatol. 1969; 100: 26-8.
5. Lewis GM, Hopper M.E, Scott MJ. Generalized *Trichophyton rubrum* infection associated with systemic lymphoblastoma. Arch Dermatol. 1953; 67: 247-62.
6. Allen DE, Snyderman R, Meadows L, et al. Generalized *Microsporum audouinii* infection and depressed cellular immunity associated with missing plasma factor required for lymphocyte blastogenesis. AM J Med. 1977; 63: 991-1000.
7. Nelson LM, Mc Niece KJ. Recurrent cushing syndrome with *Trichophyton rubrum* infection. Arch Dermatol. 1959; 80: 700-4.
8. Saferstein HL, Reid BJ, Blank F. Endothrix ring worm: A new public health problem in Philadelphia. JAMA .1964; 190: 851-2.
9. Rippon JW. Dermatophytosis and dermatophytomycosis. in: Medical mycology. The pathologic fungi and the pathogenic actinomycetes. 2nd ed. Philadelphia: WB Saunders; 1982. 154-9.
10. Hay RJ, Roberts SOB, Mackenzie DWR. Mycology. in: Champion RH, Burton JL, Ebling FJG EDITOR. Textbook of dermatology. Oxford: Blackwell scientific publication; 1992. p. 1128.
11. Ravine D, Turner KJ, Alpers MP. Genetic inheritance of susceptibility to tinea imbricate. J Med Genet. 1980; 17: 342-8.
12. Shah AK, Dixit CV, Shah BH. A Study of dermatomycosis. Indian J Dermatol Venereol Leprol. 1976; 42: 225-230.
13. Van der Straten MR, Hossain MA, Ghannoum MA. Cutaneous infection : dermatophytosis, onychomycosis and tinea versicolor. Infect Dis Clin North Am. 2003; 17: 87-112.
14. Damle AS, Fule RP, et al. Mycology of cutaneous fungal infection in ambajogai: A rural area. Ind J Dermatol Venereol Leprol. 1981; 47: 266-268.
15. Peerapur BV, Inamdar AC, Pushpapv, Srikant B, cinico mycological study of dermatophytosis in bijapur. Indian J Med Microbiol. 2004; 22: 273-4