



Dermatophytosis in a Suburban Hospital-A Study on Distribution and Clinical Types According to Age and Sex

Aishwarya Shankar¹ and Jayakar Thomas^{1*}

¹Chettinad Hospital and Research Institute, Chettinad Health City Rajiv Gandhi Salai (OMR), Kelambakkam, Tamilnadu 603103, India.

Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Aim and Objectives: Dermatophytosis is a fungal infection of the outermost layer of skin and its appendages such as hair, nails and scalp. The present study was undertaken with a view to find out the clinical pattern of dermatophytic infections in our hospital.

Materials and Methods: A total of 100 patients were included in the study. History was taken, general and physical examination was done. Multiple sites were involved in some cases, but were categorised prioritising the most predominant site involved. Patient was diagnosed and classified based on clinical types, age and sex.

Results and Conclusion: A total of 100 patients were enrolled in the study in which 56 males and 44 females were affected. The most commonly affected age group was 19 to 59 years (63%). The most common clinical type of infection was T. cruris affecting 41% of the study population.

Keywords: Dermatophytosis; age; sex; dermatology.

1. INTRODUCTION

Dermatophytosis refers to superficial fungal infection of keratinized tissues caused by keratinophilic dermatophytes [1]. It is common in tropics and may present in epidemic proportions in areas with high rates of humidity. The causative fungi are moulds belonging to three asexual genera *Microsporum*, *Trichophyton*, and *Epidermophyton* [2]. It is an indisputable fact that there is an increase in the prevalence of dermatophytosis over the past 4–5 years across the country. Comparison of studies done on superficial fungal infections in cities such as Kolkata, Ahmedabad, and Chennai during different time frames have revealed an increasing trend of dermatophytosis. Although Dermatophytosis does not cause mortality, it does cause morbidity and poses a major public health problem particularly in tropical countries like India due to favourable climatic conditions like high temperature and air humidity [3]. Though there are numerous studies available from across India and world, there is scanty information about superficial mycoses from our region. The present study was carried out to find out the clinical and mycological pattern of dermatophytosis in our tertiary care hospital.

Aim: To diagnose and classify the type of dermatophytosis on a clinical basis.

Need for Study: Though there are several studies available from around the world, there is very little data about superficial mycoses from our region. Our Hospital caters to patients from the entire Chengalpattu district with a population of 2,556,423(2011 census) with an area of 2,945km square. There is warm climate almost throughout the year. Other factors like high humidity overcrowding and poor hygienic

conditions predispose the local residents for superficial fungal infections, making it one of the major public health problems in this area. These higher temperatures causing increased body sweating facilitates fungal growth [4].

We need larger epidemiological studies to further bolster our nationwide observation of the alarming increase in its incidence as well as the prevalence [5].

Objectives: To do a prospective study to know the current clinical status of dermatophytic infection in patients attending the outpatient department of Dermatology at a suburban hospital.

To determine the most common clinical types of dermatophytosis.

Study population size: 100

2. MATERIALS AND METHODOLOGY

A retrospective study was done in the month of July. Suspected cases of dermatophytosis attending the outpatient department of our hospital were included in the study. Detailed history was taken from all the patients including age, sex, education, occupation, socioeconomic status, site, type and duration of the skin lesions along with similar history in the past or in family, contact with animals and known case of diabetes, AIDS or immuno compromised status. General and cutaneous examination was done, details of skin lesions noted and clinical diagnosis was made after consulting the head of department and classified based on clinical types, age and sex. Multiple sites were involved concurrently in some cases, but was categorised prioritising the most predominant site involved.

Table 1. Mycosis effects among school students

Mycoses	Preschool (0-5 yrs)	School age (6-11yrs)	Adolescent (12-18 yrs)	Adult (19-59yrs)	Elderly (>60yrs)	Total	Male	Female	Total
T.corporis	1	2	6	20	2	31	19	12	31%
T.cruis	0	0	5	29	7	41	23	18	41%
T.capitis	2	4	1	0	0	7	4	3	7%
T.pedis	0	0	0	4	0	4	3	1	4%
T.manuum	0	0	2	1	0	3	2	1	3%
T.faciei	0	0	2	5	1	8	6	2	8%
Onychomycosis	0	0	0	4	2	6	4	2	6%
Total	3	6	16	63	12	100	61	39	100%

3. RESULT

A total of 100 patients were enrolled in the study in which 61 males and 39 females were affected. The most commonly affected age group was the 19 to 59 years which accounted for 63% of the study population. The most common clinical type of infection was *T. cruris* affecting 41% of the study population, followed by *T. corporis* (31%) and *T. faciei* (8%). *T. capitis* affected 7% of the study population, most of whom predominantly were among the 6-11 years of age category. Onychomycosis was diagnosed for 6 patients who all belonged to the adult (19-59 years) and elderly (more than 60 years) category. 4 adult patients were diagnosed with *T. pedis* and 3 patients with *T. manuum*.

4. DISCUSSION

The dermatophytes are "one of the most common infectious agents of man". Dermatophytosis refers to the mycotic infection of hair, skin or nails. Based on clinical, morphologic and microscopic features, three anamorphic genera are identified as Dermatophytes: Epidermophyton, Microsporum and Trichophyton. Recent studies revealed that there is an obvious change in the worldwide distribution of these dermatophytes over the years, because of persistent competition for their favourable environment, leading to emergence of the predominant species and displacement of the others [6].

In the present study, males (61%) are more affected than females (39%). Higher male incidence was also reported by Grover and Roy [7]. Persons of all age groups are affected by superficial mycoses, the common group being 19 to 59 years, most likely due to outdoor physical activities and sweating. Other studies have also reported similar results [5,7]. As universally reported by most of the workers, *T. capitis* is an infection of childhood. Out of total 7 patients of *T. capitis*, 4 were in school age whereas 2 in preschool and 1 in adolescent age group. The evolving pattern of hormones after puberty is responsible for decreased incidence of *T. capitis* with the progression of age [8]. Children are less affected by onychomycosis due to faster growth rate of the nails, reduced superficial area for spore invasion and reduced probability of trauma. On the other hand, onychomycosis is more frequent in the elderly population due to reduced growth rate of the ungual plate, an increase in trauma rates, poor peripheral

circulation, diabetes and inability to maintain good foot care [9]

A variety of oral and topical drugs have been used for the treatment of dermatophytosis infection over the years. Topical antifungals are considered as first line treatment for uncomplicated superficial dermatophytosis. Itraconazole of azole group and terbinafine of allylamine group are the most common types of topical treatment of dermatophytosis [10]. Topical antifungal therapy is more affordable and has lesser adverse effects than oral antifungal drugs. Newer topical formulation of amphotericin B (AmB) considers more safety to use and is effective against sporotrichosis when other drugs fail and also improves quality of life by resolving lesions over a shorter period of time [11]. *Tinea corporis*, *Tinea cruris*, and *Tinea pedis* generally respond to topical antifungal agents, but oral antifungal agents should be considered for severe disease, failed topical treatment, immunocompromised patients, or severe forms of *Tinea pedis* [12].

Apart from pharmacotherapy, there are other important considerations while managing a case of dermatophytic infection; Improving personal hygiene, avoidance of humidity and occlusive synthetic clothing; discontinuation of corticosteroid containing antifungal creams; and close examination of possible carriers like family members and pets, hold importance in managing dermatophytosis [13].

5. CONCLUSION

Dermatophytosis is mainly a disease of young and middle age adults, particularly males due to chances of exposure to the risk factors are more due to physical exertion and contact with infected persons. *Tinea corporis* and *Tinea cruris* were the most common clinical types. *Tinea cruris* was predominantly a disease of adult males whereas *Tinea capitis* was seen mainly in prepubertal age group. We need to recognize and appreciate the fact that there is a lack of documentation and evidence from suburban and rural areas regarding this frightening epidemic of superficial dermatophytosis in India.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline Patient's consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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