

Original Research

To Determine Dermatophytosis infection in study population

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ABSTRACT:

Background: Dermatophytosis is a superficial infection caused by a group of fungi, dermatophytes. The present study was conducted to determine dermatophytosis infection in study population. **Materials & Methods:** The present study was conducted on 140 patients of both genders. In all patients, general examination, systemic examination, and thorough dermatological examination were done. Blood sugar, retrovirus screening, fungus scraping and fungal culture were done. A histopathological examination with H and E stain and special stain was done. **Results:** Out of 140 patients, males were 80 and females were 60. Type was T. corporis in 35, T. cruris in 19, T. manuum in 5, T. unguium in 22, T. Faceii in 25, T. capitis in 14 and T. pedis in 20. The difference was significant (P< 0.05). **Conclusion:** Authors found that dermatophytosis is common in adult population. Most common was T. corporis T, cruris, T, manuum, T, unguium, T. Faceii, T. capitis and T. pedis.

Key words: Dermatophytosis, Stain, Tinea manuum.

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INTRODUCTION

Dermatophytoses is a superficial infection caused by a group of fungi, dermatophytes. The infection is common world-wide with higher prevalence in tropical countries. The dermatophytoses infection is commonly referred as ringworm due to the appearance of the lesion.¹ Dermatophytes comprise of three major genera, Trichophyton, Microsporum and Epidermophyton, of the class hyphomycetes and division deuteromycota. They are keratinophilic in nature and have the ability to colonize keratinized non-living tissues such as skin, hair and nail in human and animals. The infection spreads easily by direct contact from infected humans and animals or through fomites.²

India is a large subcontinent with remarkably varied topography, situated within the tropical and subtropical belts of the world. Its climate is conducive to the acquisition and maintenance of mycotic infections.³ Accurate assessment of the prevalence and etiological agent is desirable to estimate the size of therapeutic problem and to prevent the transmission and spread of such

infections with adequate measures.⁴ These patients are a potential source of infection to their family members and others closely associated with them. Various mechanisms contributing to chronicity and recurrences have been proposed but the exact reasons have not been elucidated. Despite the increasing incidence of recurrent dermatophytosis, information on the extent of the burden in our country is scarce. This superficial fungal infection was an easily treatable condition for the practitioners previously with the commonly used antifungals.⁵ The present study was conducted to determine dermatophytosis infection in study population.

MATERIALS & METHODS

The present study was conducted in the department of Dermatology. It comprised of 140 patients of both genders. The study was approved from institutional ethical committee. All participants were informed regarding the study and written consent was obtained.

Data related to participants such as name, age, gender etc. was recorded. In all patients, general examination, systemic

examination, and thorough dermatological examination were done. Blood sugar, retrovirus screening, fungus scraping and fungal culture were done. A histopathological

examination with H and E stain and special stain was done. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of participants

	Total- 140	
Gender	Males	Females
Number	80	60

Table I shows that out of 140 patients, males were 80 and females were 60.

Graph I Number of patients

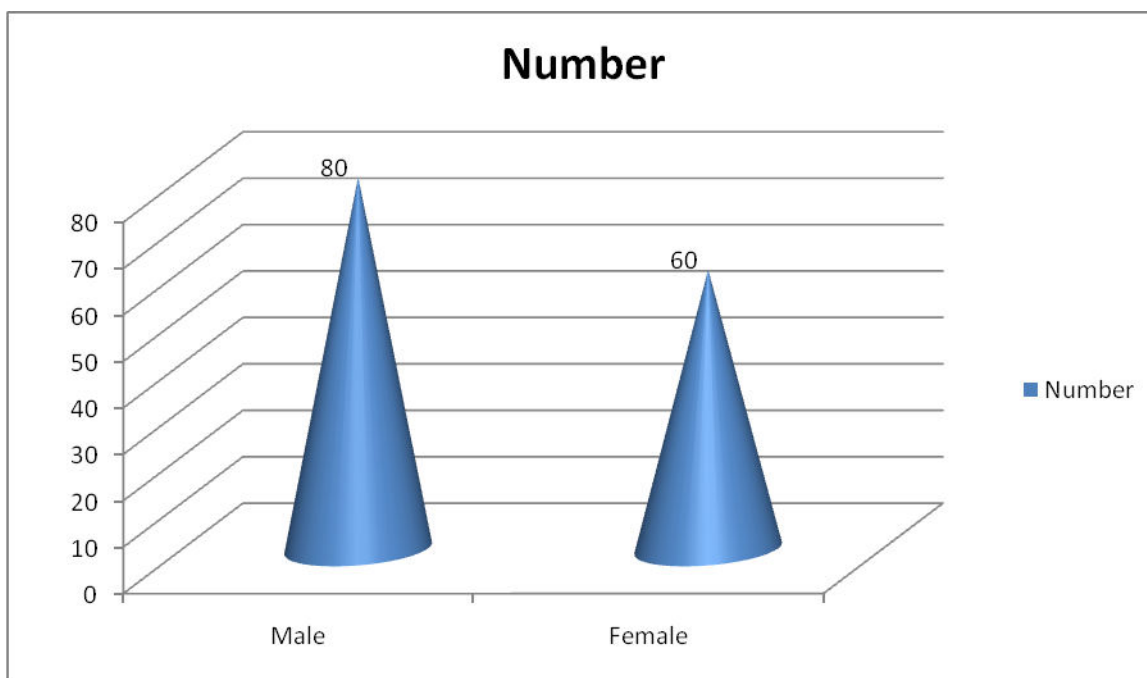
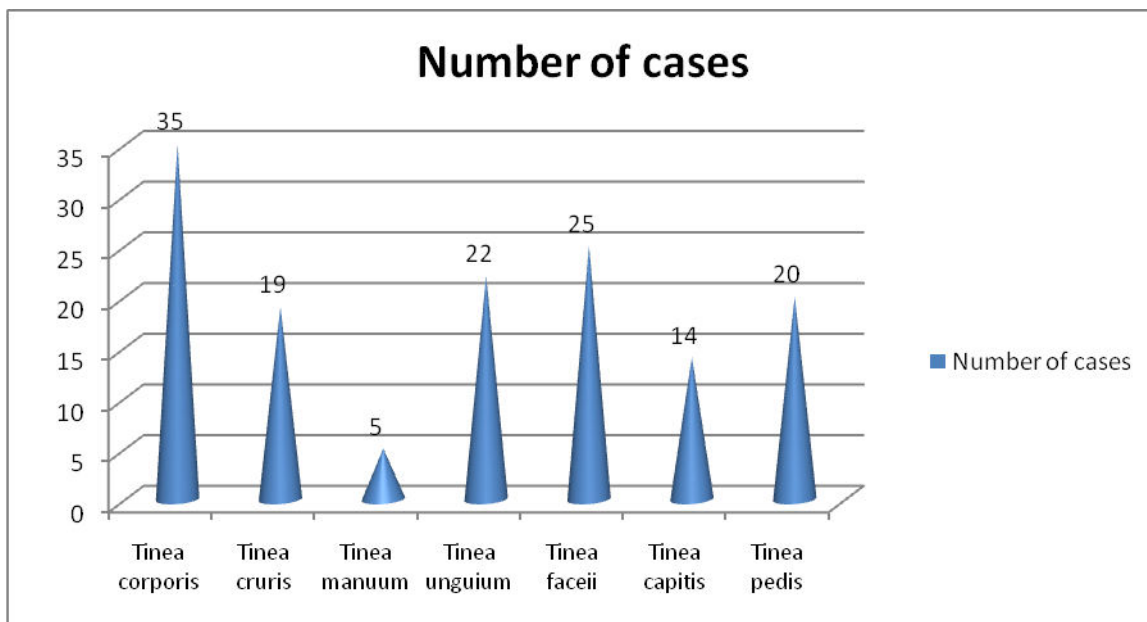


Table II Type of dermatophytosis

Type	Number of cases	P value
Tinea corporis	35	0.01
Tinea cruris	19	
Tinea manuum	5	
Tinea unguium	22	
Tinea faceii	25	
Tinea capitis	14	
Tinea pedis	20	

Table II, graph II shows that type was T. corporis in 35, T. cruris in 19, T. manuum in 5, T. unguium in 22, T. Faceii in 25, T. capitis in 14 and T. pedis in 20. The difference was significant (P< 0.05).

Graph II Type of dermatophytosis



DISCUSSION

Dermatophyte infections are widespread and cause significant distress to the patients socially, emotionally and financially.⁶ Recurrent dermatophytosis is fast emerging as a challenge for dermatologists in India. Although the infection is not invasive and easy to cure, its widespread nature and cost of the treatment is a major public health problem and causes colossal damage to the economic status of the tropical countries like India. The dermatophytes manifest as infections of keratinized tissue like skin, hair, nails etc., of humans and animals.⁷ Some species of dermatophytes are endemic in certain parts of the world and have a limited geographic distribution. *T. soudanense*, *T. gourvilii* and *T. yaoundii* are restricted to Central and West Africa. *T. concentricum* is confined to islands in the South pacific. The increasing mobility of the world’s population is disrupting several epidemiological patterns. Some dermatophytes like *E. floccosum*, *T. rubrum* and *T. tonsurans* are globally distributed.⁸

We found that out of 140 patients, males were 80 and females were 60. Kumar et al⁹ found that chronic dermatophytosis was seen in 68%; tinea corporis was the most common presentation; topical steroid application was seen in 63%; azoles were the most common antifungals used; varied morphologies such as follicular and non-follicular papules, arciform lesions, pseudoimbricata were seen in steroid modified tinea. *Trichophyton rubrum* and *Trichophyton mentagrophytes* were the most common species isolated in culture, but rare species such as *Trichophyton tonsurans*, *Trichophyton schoenleinii*, *Epidermophyton floccosum*, and *Microsporum audouinii* were also isolated from chronic cases. Histopathology showed perifolliculitis in steroid modified tinea. Minimal

inhibitory concentration was lowest for itraconazole in susceptibility studies.

We observed that type was *T. corporis* in 35, *T. cruris* in 19, *T. manuum* in 5, *T. unguium* in 22, *T. Faceii* in 25, *T. capitis* in 14 and *T. pedis* in 20. Venkatesan et al¹⁰ included a total of 210 patients showing lesions typical of dermatophytes infection. Diagnosis was confirmed by conventional and polymerase chain reaction - restriction fragment length polymorphism (PCR-RFLP) technique. *Tinea corporis* was the predominant clinical site which was followed by tinea cruris. A total of 143 dermatophytes were isolated from the clinical samples. *T. rubrum* was the predominant etiological agent with 70/143 isolates and *T. mentagrophytes* was the second most common with 64/143 isolates. Amplification of internal transcribed spacers (ITS) was successful in all the clinical isolates by PCR and produced species specific banding pattern in RFLP using restriction enzyme *Mva I*.

Senthamilselvi et al¹¹ found that out of total 150 subjects, most common clinical type of dermatophytosis, identified in our study, was tinea corporis in 53 (35.3%) subjects followed by tinea cruris in 34 (22.6%) subjects. 134 (89.3%) subjects were tested positive by direct microscopy (KOH mount) and 69 (46.0%) by culture. Highest KOH mount positivity was seen in patient suffering from tinea corporis (94.3%) followed by tinea cruris (94.1%). Culture positivity was highest with tinea corporis (54.7%) followed by tinea lesions on more than one site (47.3%) and tinea cruris (47.0%). In our study, total 69 culture positive samples were isolated and the most common species isolated was *T. rubrum* in 41 (59.42%) cases.

Phadke et al¹² found that recurrent dermatophytosis was seen in 9.3% of all patients with dermatophytosis in our

study. *Trichophyton mentagrophytes* was the most common species identified (36 patients, 40%) samples followed by *T. rubrum* (29 patients, 32.2%). In-vitro antifungal susceptibility testing showed that the range of minimum inhibitory concentrations (MIC) on was lowest for itraconazole (0.015–1), followed by terbinafine (0.015–16), fluconazole (0.03–32) and griseofulvin (0.5–128) in increasing order.¹³

CONCLUSION

Authors found that dermatophytosis is common in adult population. Most common was *T. corporis*, *T. cruris*, *T. manuum*, *T. unguium*, *T. Faceii*, *T. capitis* and *T. pedis*.

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