

CLINICOMICROBIOLOGICAL ASPECTS OF TINEA CRURIS IN MADRAS

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A total of 242 patients with clinically diagnosed tinea cruris were screened and 181 (74.7 %) were found to be positive in culture for dermatophytes. 93.9% of infections were caused by *Trichophyton* spp., of which 58.4% were *Trichophyton rubrum*, 5.5% were *Epidermophyton floccosum*, 3.8% were *Trichophyton tonsurans* and we had a single isolate of *Microsporum gypseum* complex. Incidence of tinea cruris was higher in males (95.6%) than in females (4.4%). 45% of the cases were recurrent and 38% of cases were chronic tinea cruris. Three patients had granulomatous lesion. Zoophilic *T mentagrophytes* was the major aetiologic agent isolated from all the 3 cases of granulomatous tinea cruris.

Key Words : Tinea cruris, Dermatophytes

Introduction

Dermatophytes are the major agents of superficial mycoses of man and remain a general public health problem.^{1,3} Tinea cruris, one of the major dermatophyte infections in groin and perianal region is found in all parts of the world. It is more prevalent in tropics, and may reach epidemic proportions in areas where high rate of humidity, over population and poor hygienic conditions are prevalent.²

This paper reports the clinico-microbiological aspects of tinea cruris in Madras.

Materials and Methods

242 patients with clinically diagnosed tinea cruris attending dermatology department, Madras Medical College, Madras were screened from March, 1993 to March, 1996. Skin scrapings were taken from the active margin of the lesion and were cultured onto Sabouraud's dextrose agar slants and kept for incubation at room temperature for 21 days.

The positive culture was further identified by colony morphology and microscopic characters using standard procedures.⁴

Results

181/242 (74.7%) of patients were positive in culture for dermatophytes. Out of 181 patients studied, 173 (95.6%) were males and 8 (4.4%) were females. 179 patients were from very low income group (daily wage labourers, porters and scavengers etc). The incidence of tinea cruris was found to be highest in patients between 20-45 years (67.9%) whereas it was very low in children below 10 years and in people above 60 years (Table I)

Trichophyton rubrum was the most common species isolated (58%). *T rubrum* was more frequently isolated from recurrent and chronic tinea cruris in our study (Table II).

Granulomatous lesions were recorded in 3 patients, all of them were diabetics. *Trichophyton mentagrophytes* (granular type) was isolated from all these cases. Atopy was the common condition associated with tinea cruris (35.9%), followed by diabetes (14.4%) (Table III).

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Table I. Tinea cruris - age and sex incidence

Age (years) \ Sex	0-10	10-15	15-20	20-30	30-45	45-60	60 & above	Total
Male	1 (0.5)	12 (6.6)	21 (11.6)	68 (38)	54 (30)	10 (5.5)	7 (3.8)	173 (95.6)
Female	-	2 (1.1)	3 (1.6)	1 (1.1)	-	2 (1.1)	-	8 (4.4)
Total	1 (0.5)	14 (7.7)	24 (13.2)	69 (39)	54 (30)	12 (6.6)	7 (3.8)	181 (100)

* Figures in paranthesis indicate percentage

Table II. Aetiology of tinea cruris

S. no.	Name of the species	No. of isolates	%
1.	Trichophyton rubrum	105	58.4
2.	Trichophyton mentagrophytes (floccose type)	30	16.5
3.	Trichophyton mentagerophytes (granular type)	27	14.9
4.	Trichophyton tonsurans	7	3.8
5.	Trichophyton violaceum	1	0.5
6.	Microsporum gypseum complex	1	0.5
7.	Epidermophyton floccosum	10	5.5

Table III. Various associated disorders/diseases of patients with tinea cruris

S. no.	Name of the disease/disorder	No. of cases	%
1.	Atopy	65	35.9
2.	Diabetes	26	14.4
3.	Ichthyosis	9	4.9
4.	Steroid therapy/Organ transplant	7	3.9
5.	No known disorder	74	40.9
Total		181	100.0

Discussion

The present study in Madras reveals that tinea cruris was more common in males (95.6%), whereas the incidence was very low in females (4.4%). Similar findings were recorded by previous workers.^{1,2,5,6}

Trichophyton rubrum, an obligate anthropophilic dermatophyte was the most common pathogen isolated from the infection (58.4%).

The predominance of Trichophyton rubrum was reported in New Zealand,⁷ Italy⁸ and in Poland.⁹ But it was reported to be less common in Kuwait¹⁰ and in Portugal.¹¹ Previous reports from India were similar to our observation.^{5,6,12,13}

Trichophyton mentagrophytes (granular type) was isolated in about 14.7% of patients. Trichophyton mentagrophytes (granular type) is predominant in animals, but infection has also been reported from human ringworm.¹⁴

In our study we had three cases of granulomatous lesion and all of them were diabetic patients.

In our present study, we have isolated 7 strains of *Trichophyton tonsurans*. This species is known to cause infection of the scalp throughout the world.¹⁵ 5/26 patients had diabetes mellitus and perhaps this could have contributed to the high incidence of *Trichophyton tonsurans* in these patients. Hay has reported that diabetes is a predisposing factor in the development of dermatophytosis.¹⁶

The other non-anthropophilic dermatophyte isolated in this study was a single isolate of *Microsporum gypseum* complex, which is a rare isolate from human ringworm.

References

1. Emmons CW, Binford CH, Utz JP, Kwon-chung. Medical mycology. Philadelphia: Lea & Febiger, 1977: 177.
2. Rippon JW. The pathogenic fungi and the pathogenic actinomycetes. Philadelphia: Saunders, 1982: 154.
3. Venugopal PV, Venugopal TV. Antimycotic susceptibility testing of dermatophytes. *Ind J Med Microbiol* 1993; 11 : 151-4.
4. Davise HL. Medically important fungi - a guide to identification. Hagerstown: Harper & Row, 1976: 1.
5. Padhye AA, Thirumalachar MJ. Dermatophytosis in Poona, India. Observation on incidence, clinical features, environmental factors and causal agents studied during 1958 to 1963 at Sasson Hospitals, Poona. *Mycopath Mycol Appl* 1970; 40: 225-40.
6. Das gupta SN, Shome SK. Studies in medical mycology on the occurrence of mycotic diseases in Lucknow. *Mycopath Mycol Appl* 1958; 19 : 177-86.
7. Allred BJ. Dermatophyte prevalence in Wellington, New Zealand. *Sabouraudia* 1982; 20: 75-9.
8. Todaro F, Germano D, Criseo G. An outbreak of tinea pedis and tinea cruris in tyre factory in Messina, Italy. *Mycopathologia* 1983; 83: 27-31.
9. Henryk P. Mycological flora isolated from people in Poland. *Mycopath Mycol Appl* 1970; 40: 65-7.
10. Karaouli R, Selim M, Mousa A. Incidence of dermatophytosis in Kuwait. *Sabouraudia* 1979; 17: 131-4.
11. Hermãno N. Mycological study of 519 cases of ringworm infections in Portugal. *Mycopath Mycol Appl* 1960; 13: 121-5.
12. Verenkar MP, Pinto MJW, Rodriguess, et al. Clinico-microbiological study of dermatophytoses. *Ind J Pathol Microbiol* 1991; 34: 186-92.
13. Gupta BK, Kumar S, Rajkumar, et al. Mycological aspects of dermatomycosis in Ludhiana. *Ind J Pathol Microbiol* 1993; 36: 233-7.
14. Harold LS, Blank F. Tinea corporis caused by *Trichophyton mentagrophytes* var *granulosum*. *Mycopath Mycol Appl* 1967; 31: 267-9.
15. Rippon JW. Forty four years of dermatophytes in a Chicago clinic (1944-1988) *Mycopathologia* 1992; 119: 25-8.
16. Hay RJ. Chronic dermatophyte infections. I. Clinical and mycological features. *Br J Dermatol* 1982; 106, 1-9.