MYCOLOGY OF CUTANEOUS FUNGAL INFECTIONS IN AMBAJOGAI; A RURAL AREA

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Summary

Two hundred and eighteen cases of fungal skin infections were studied. Tinea cruris was most common (34.4%), followed by tinea corporis (23.8%) and tinea pedis (21.6%). Tinea versicolor (8.7%) tinea manum (4.6%), tinea unguium (3.7%) and tinea capitis (3.2%) were also seen. The male : female ratio was 4 : 1. The total isolates were 117. *Trichophyton rubrum* was the most common isolate (35%), closely followed by *Epidermophyton floccosum* (31.6%). *Trichophyton mentagrophytes* (17.9%), *Malassezia furfur* (13.7%) and *Microsporum audouini* (1.7%), were the only other isolates.

Dermatomycosis is seen all over the world, both in urban and rural areas. Most of the work on this topic is conducted in cities where facilities for screening the population for fungal infections and for identification of fungi are available. As our Medical College and Hospital is situated in a rural area, all the cases come from the surrounding villages making up an exclusively rural population.

The climatic conditions of Ambajogai, which is 600 metres above sea level are characterized by a mean temperature of 35-42°C in summer, 25-32°C in winter, a rainfall of about 650-700 mm. per year and that too only in the period of June to September. The weather is otherwise generally dry.

Although *Malassezia furfur* is not a dermatophyte we have included it in our study along with dermatophytic fungi.

Material and Methods

Skin scrapings were taken from 218 patients, clinically suspected of having fungal infections of skin. All were out-door patients at Swami Ramanand Teerth Rural Medical College, Ambajogai.

The skin scrapings were studied for evidence of fungal elements by direct microscopy in KOH and by culture on Sabouraud's agar[1,2].

Results

Amongst clinical entities, tinea cruris tops the list (34.4%). Tinea corporis comes next (23.8%) which is closely followed by tinea pedis (21.6%). Others are as follows: tinea manum (4.6%), tinea unguium (3.7%) and tinea

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Received for publication on 9—6—1980

capitis (3.2%). We did not have any case of tinea barbae. Tinea versicolor was found in 8.7% cases.

Most of the infections were seen between 11 to 50 years with a male : female ratio of 4:1 (Table 1).

Direct examination of scraping material in KOH gave 64.2% positive findings. Out of the total 140 positive wet preparations 16 were from cases of tinea versicolor and were identified as *Malassezia furfur*.

Positivity of cultures was 46.3%. *Trichophyton rubrum* was seen in 35% of positive cultures. *Epidermophyton floccosum* (31.6%), *Trichophyton mentagrophytes* (17.9%) and *Microsporum audouini* (1.7%) were also identified. *Malassezia furfur* was not isolated in culture. No other fungus was isolated (Table 2).

TABLE 1

The age and sex incidence of fungus infections

	Age in years											
	0-10		11-20		21-30		31-40		41-50		Above 50	
	M	F	M	F	M	F	M	F	M	F	M	F
Tinea cruris	0	0	10	3	19	15	13	2	12	2	6	3
Tinea corporis	2	0	4	1	23	4	11	2	3	0	1	1
Tinea pedis	1	0	3	0	13	5	11	3	3	1	5	2
Tinea manum	0	0	1	2	2	1	2	1	0	0	1	0
Tinea unguium	0	0	0	0	0	0	1	1	3	1	2	1
Tinea capitis	4	1	2	0	0	0	0	0	0	0	0	0
Tinea versicolor	0	0	5	0	0	1	6	0	0	0	1	0
Total	7	1	25	6	63	16	44	9	21	4	16	6

TABLE 2

The fungal isolates in relation to clinical types

	Trichophyton rubrum	Epidermophyton floccosum	Trichophyton mentagrophytes	Microsporum audouini	Malassezia furfur
Tinea cruris	5	29	12	—	—
Tinea corporis	25	2	7	1	—
Tinea pedis	9	4	1	—	—
Tinea manum	1	1	—	—	—
Tinea unguium	11	1	—	—	—
Tinea capitis	—	—	1	1	—
Tinea versicolor	—	—	—	—	16
Total	51	37	21	2	16

Discussion

Tinea cruris tops our list being seen in 34.4% cases. Although similar results were observed by other workers[3,4-6] the study at Aurangabad[7], a nearby urban place, reveals tinea cruris in only 9.5% cases. As against this tinea corporis is seen in 23.8% cases at our center and in 51.5% cases at Aurangabad. Tinea pedis was found in 21.6% cases here, well above the incidences noted elsewhere. At Aurangabad the incidence of tinea pedis is merely 0.2%. Tinea manum (4.6%), tinea unguium (3.7%) and tinea capitis (3.2%) are also more frequently

encountered in our area. At Aurangabad they were found in nil, 0.6% and 1.2% patients respectively. Finding of tinea versicolor is quite comparable at Aurangabad and here. Its occurrence was 13% at Aurangabad and 8.7% at Ambajogai.

The age-wise incidence is same at Aurangabad and at Ambajogai being mostly in the working population. Most of the cases reported from Aurangabad were in the age group of 21-30 years, which is true here also. At the same time age groups of 11-20 and 31-50 also have considerable number of patients in our study.

Male : female ratio here is 4:1. In a big city like Bombay[8] the ratio was 3:1 and in small city like Chhotanagpur[9] the ratio was 6:1.

Positivity of cultures was less at Aurangabad being only 11.8%. On the contrary we could get 46.3% positive cultures. Our data is comparable with some other workers e.g., Kalra et al[10] (32%), Verma et al[6] (36%).

Trichophyton rubrum was seen to constitute 35% of positive cultures. Khalique at Aurangabad[7] showed that *T. rubrum* constituted 42% of positive cultures.

Epidermophyton floccosum constituted 31.9% and 58% of positive cultures at Ambajogai and Aurangabad respectively. Considering the atmospheric conditions which are dry at both the places, the incidence of *E. floccosum* is singificantly high at both places. Other dry places like Lucknow[3] and Delhi[4,5,10] yielded *E. floccosum* in very small numbers below 3%. According to Kalra et al[10] humidity favours infections due to *E. floccosum*. But in our area as at Aurangabad, humidity cannot be accounted for. Khalique from Aurangabad[7] explains this as follows: So in absence of reasonable explanation for this it can only be said that prevalence of this species of dermatophyte is natural in this area.

At Aurangabad no other dermatophyte was isolated. As against this we could isolate *Trichophyton mentagrophytes* (17.9%) and *Microsporum audouini* (1.7%). *M. audouini* has been isolated by Prasad & Prakash[9] and Kandhari & Sethi[11] also.

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