

# A clinico-epidemiological study of dermatophytoses in Northeast India

Sir,

Dermatophytosis is the superficial fungal infection of keratinized tissue by dermatophytes. Numerous studies on the clinico-mycological aspects of dermatophytoses have been undertaken from different parts of India, but very few studies have been reported on the etiological profile from the Northeast. The present study was undertaken to determine the mycotic profile of dermatophytoses and to observe the socio-epidemiological association.

The study was conducted in the Assam Medical College and Hospital, Dibrugarh, for a period of one year. One hundred clinically diagnosed cases of fungal infections of the skin, hair and nails were included. Patients were evaluated according to a predetermined protocol and history of occupational exposure, trauma and associated factors including socioeconomic status were recorded. Samples were collected, cultured and identified according to standard procedures. Nondermatophytic molds were considered significant only if they were isolated repeatedly (> 2 times), in pure culture and with a positive potassium hydroxide (KOH) finding.<sup>[1]</sup>

The maximum number of patients were found in the age group of 21-30 years (39%) followed by 11-20 years (19%). The male:female ratio was 3:1. The majority (60%) of the cases in this study belonged to the lower middle class (Rs. 20,000-40,000/annum) followed by the lower class (<20,000/annum). Most of the cases were engaged in occupations related to agriculture (39%), followed by students and unskilled laborers (15%). Associated predisposing conditions included diabetes mellitus 11 (11%), eczema 8 (8%), tuberculosis 4 (4%), systemic lupus erythematosus 3 (3%), psoriasis 3 (3%) and leprosy 2 (2%). As for the seasonal occurrence, the percentage of cases had increased during the monsoons. Tinea corporis was found to be the most common (42%) clinical type followed by tinea cruris (11%). Out of the 100 cases, 90 were positive by direct microscopy and 61 were positive on culture. The most common fungal isolate was that of dermatophytes 48 (78.6%), followed by nondermatophytic moulds 7 (11.5%) and *Candida spp.* 5 (8.19%). Of the dermatophytes, *Trichophyton rubrum* (47.54%) was the most commonly found, followed by *Trichophyton mentagrophytes* (22.95%), *Trichophyton violaceum* (1.63%), *Epidermophyton spp.* (3.27%) and *Microsporum gypseum* (3.27%). Nondermatophytic molds included *Curvularia lunata*

(3.27%), *Fusarium Spp.* (3.27%), *Aspergillus niger*, *Aspergillus flavus* and *Penicillium spp.* (1.63%). Among *Candida spp.*, *Candida albicans* was the most commonly found (60%). *Rhodotorula* was isolated in one case of tinea manuum, the exact role of which could not be explained.

In the present study, culture positivity was 61% which is high but comparable to earlier studies.<sup>[2]</sup> The maximum number of patients were seen to be in their third decade of life with males outnumbering females. Similar findings have been observed in a majority of the earlier studies.<sup>[3]</sup> Regarding occupational exposure, the majority of the patients in this study were engaged in agricultural work and belonged to the lower income groups. The probable factor put forward for this association includes increased sweating in outdoor activities, constant contact with plants and soil and unhygienic conditions associated with poverty. The maximum number of cases were reported during the months of August to September when the climate is hot and humid which has also been reported by other workers.<sup>[4]</sup> The reports published so far in India unequivocally report *Trichophyton rubrum* to be the most common dermatophyte isolated from various lesions followed by *Trichophyton mentagrophytes*<sup>[3]</sup> which is consistent with our study results. The isolation rate of *Microsporum gypseum* (3.27%) is higher in this study as compared to other studies.<sup>[3]</sup> Of the species of dermatophytes isolated, 96% were anthropophilic and 4% geophilic. *Candida spp.* was isolated in 8.19% cases and the isolation rate of candida in this study is comparable to that of other studies.<sup>[5]</sup> Nondermatophytic molds were isolated from repeated culturing in this study. Repeat cultures were done at weekly intervals and most of the patients were on antifungal therapy from the time of the first isolate. Almost all of these molds were isolated from infections of the nail. The isolation of these moulds have also been reported from various parts of the world from cases of superficial mycosis.<sup>[6]</sup> Earlier the growth of nondermatophytic molds from skin, hair and nails in culture, were regarded as contaminant. Their emergence as causal agents of superficial mycosis needs evaluation.

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