

## ISOLATION AND IDENTIFICATION OF DERMATOPHYTES FROM SINDH, PAKISTAN

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### Abstract

During a clinical survey, 26 cases from the Civil Hospital, Karachi and 40 cases from the Liaquat University of Medical and Health Sciences, Jamshoro were studied. The cases were followed up for clinical and mycological examination. A total of 13 species of dermatophytes viz., *Aspergillus niger*, *A. flavus*, *A. fumigatus*, *Trichophyton mentagrophytes*, *T. rubrum*, *T. tonsurans*, *T. megnini*, *T. verucosum*, *Microsporum canis*, *M. gypsum*, *M. audouini*, *Candida albicans* and *Epidermophyton floccosum* were isolated and identified causing human infection which were of common occurrence.

### Introduction

In 1975 and 1976 the W.H.O reported that mycosis are serious medical and social problem throughout the world and attempts should be made to provide mycological information and services to areas where they are a public health problem. The principal mycosis (fungal infection) affecting man can be distinguished by sites of the body affected (Kane & Smitka, 1980). The dermatomycosis constitute a limited group of fungi that are responsible for dermatomycosis, a type of infection involving predominantly the structures of the skin and its appendages (Layton & Remigy 1989). The most serious and widest range of fungal infection are found in tropical developing countries (Philopot & Shuttleworth 1989). The present report describes the occurrence of common dermatophytes from the Sindh province of Pakistan.

### Material and Method

A total of 66 patients were selected from Civil Hospital Karachi and Liaquat University of Medical of Health Sciences, Jamshoro. The patients were examined under normal lights for removal of infected hair, skin and nails in the form of scales, crust and hair stumps. The infected hair, scalp and nail particles were inoculated on the slanted surface of Sabouraud dextrose agar (SDA) medium and incubated at 27–30°C for up to three weeks. Species of the dermatophytes isolated during this study were identified on the basis of their growth characteristics and microscope morphology.

### Result and Discussion

During the survey, a total of 13 different species of dermatophytes were isolated and identified (Table 1). It included 9 species of dermatophytes and 3 opportunistic fungi i.e., *A. fumigatus*, *A. flavus* and *A. niger* (Table 2). *Microsporum gypsum* was isolated from

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23% of the patients who were between 10–20 years. Similarly *Trichophyton mentagrophyte* was isolated from 12% of the patients who were between 25–35 years. It appears that patients between 15 – 20 years were more affected by the dermatophyte infections and the frequency of infection decreased with either increase or decrease in the age of the patients. In the present study, ringworm of nail and skin caused by *Trichophyton rubrum*, *T. mentagrophytes* and ringworm of hair, skin and nail caused by *Microsporum canis* and *Microsporum gypsum* were found more common. Our results support the findings of Khan & Anwar (1969) who observed 376 cases of *Tinea cruris* in Karachi and found *Trichophyton rubrum* (60%) as the major causative agent. Similarly Khan & Hafiz (1979) studied different cases of dermatomycosis in Karachi and found *Tinea cruris* as the most common infection. Farooqi *et al.*, (1984) reported *Microsporum frequentans* from Karachi but we could not isolate *Microsporum* from the patients studied.

**Table 1. Fungi isolated from the patients.**

S. No.	Pathogen	Diagnosis	Clinical infected parts
1.	<i>Trichophyton mentagrophytes</i>	<i>T. corporis</i> , <i>T. pedis</i> , <i>T. cruris</i> . <i>T. barbae</i>	Skin, Hair, Nail
2.	<i>Trichophyton rubrum</i>	<i>T. corporis</i> . <i>T. barbae</i> <i>T. unguis</i> . <i>T. pedis</i>	Skin, Hair, Nail
3.	<i>Microsporum canis</i>	<i>T. capitis</i>	Hair
4.	<i>Microsporum gypsum</i>	<i>T. capitis</i> , <i>T. corporis</i>	Skin, Hair, Nail
5.	<i>Candida albican</i>	<i>Candidiasis</i>	Skin. Nail
6.	<i>Microsporum audouini</i>	<i>T. capitis</i>	Hair
7.	<i>Trichophyton tonsurans</i>	<i>T. capitis</i>	Hair
8.	<i>Trichophyton megnini</i>	<i>T. capitis</i>	Hair
9.	<i>Trichophyton verucosum</i>	<i>T. capitis</i> , <i>T. barbae</i>	Hair
10.	<i>Epidermophyton floccosum</i>	<i>T. cruris</i> , <i>T. pedis</i> , <i>T. unguis</i>	Skin and nail
11.	<i>Aspergillus fumigatus</i>	<i>Otomycosis</i>	Ear
12.	<i>Aspergillus flavus</i>	<i>Aspergillois</i>	Lungs
13.	<i>Aspergillus niger</i>	<i>Otomycosis</i>	Ear and lungs

**Table 2. Age wise distribution of members of *Trichophyton* and *Microsporum*.**

S/No	Age in years	Total	Percentage
1.	0 – 5	2	3
2.	5 – 10	2	3
3.	10 – 15	12	18
4.	15 - 20	15	23
5.	25 - 30	12	18
6.	30 - 35	10	15
7.	35 - 40	5	8
8.	40 - 45	5	8
9.	50 - 55	4	6
10.	55 - 60	2	3
11.	60 - 65	1	2

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