

Incidence of Superficial Mycotic Infections in Surguja, Chhattisgarh

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Abstract: A mycological study was undertaken to determine the prevalence and incidence of superficial mycotic infections in Surguja, Chhattisgarh. Out of 187 cases 64 cases (45.3%) were infected with dermatophytes. Among them the commonest etiological agent encountered was *Trichophyton rubrum* (28.1%) followed by *Trichophyton mentagrophytes* (9.3%), *Trichophyton tonsurans* (4.7%) and *Trichophyton violaceum* (3.1%). Other most frequently isolated non-dermatophytes were *Candida albicans* (34.3%) and *Aspergillus* species (20.3%) respectively.

Keywords: superficial mycotic infections, *Trichophyton rubrum*, Chhattisgarh

1. Introduction

Superficial fungal infections are common skin diseases, affecting millions of people worldwide [1]. Cutaneous and subcutaneous fungal infections can be caused by dermatophytes, yeasts and non-dermatophytes molds, although dermatophytes cause most of the cutaneous fungal infections. The dermatophytes are a group of closely related fungi that have the capacity to invade the keratinized tissue (skin, hair and nails) of humans and other animals to produce an infection, dermatophytosis and keratinomycosis commonly referred to as ringworm [2]. Infections are generally restricted to the skin and they do not penetrate the deeper tissue or organs of immunocompetent hosts [3].

This study has been undertaken with a view to see the superficial mycotic infection and the occurrence of the most prevalent fungi causing dermatophytosis in Surguja, Chhattisgarh.

2. Methods

For processing and identification of the fungi, following materials and methods have been used:

The present investigation, at about 187 samples from clinically suspected fungal infections especially dermatophytosis of various body sites including trunk, groin, head and scalp, face, hand, toe and finger, nails collected from local district hospitals. The sites of lesion were thoroughly cleaned with 70% alcohol. The samples were collected in a sterile screw capped tube by scraping across the inflamed margin of the lesions with the help of a disposable scalpel blade. Then samples brought to laboratory and stored on 37°C in an incubator for further studies.

Identification

Microscopic analysis

A small quantity of the material or sample (skin, nail, hair) was placed in a drop of 10% KOH solution on a microscopic slide and a coverslip was placed over it. Then the slide was gently heat up over the flame to bring about clearing and the preparation was left inside a Petri dish for 20 minutes or

more if the specimen was very thick. Then the slide was examined under the microscope for the presence of fungal elements.

Culture medium

The specimens were cultured in SDA (Saubroud Dextrose Agar) medium with chloramphenicol (0.05 mg/ml) and cyclohexamide (0.5 mg/ml). Sample were spread over the surface of the medium of preprepared Petri plates and then Cultures were incubated at 37°C for up to 7 days and checked at frequent intervals for growth. When growth of fungal colonies appeared, fungal species were identified on the basis of cultural characteristics, pigment production and microscopic examination in lacto phenol cotton blue preparation. Non-dermatophyte moulds were identified by microscopic morphology (Graser, 2006). Then identification were confirmed from Agharkar Research Institute Pune, India

3. Result & Discussion

In the direct microscopic examination, the fungal elements seen in superficial mycoses were the septate branching hyphae of dermatophytes and the pseudohyphae and blastospores of *Candida*.

Table 1: Dermatophytes isolated from 64 cases of superficial mycotic infections

Dermatophytes	No. of Isolates	%
<i>Trichophyton rubrum</i>	18	28.1
<i>Trichophyton mentagrophytes</i>	06	09.3
<i>Trichophyton tonsurans</i>	03	04.7
<i>Trichophyton violaceum</i>	2	3.1
Total	29	45.3

Among the 64 cases, dermatophytes were the most prevalent and isolated from 29 cases (45.3%) as shown in **Table-1**. Out of which the most frequently isolated were *Trichophyton rubrum* and *T. mentagrophytes* and reported in 18 cases (28.1%) and 6 cases (9.3%) respectively. Most studies also found *T. rubrum* and *T. mentagrophytes* as the commonest etiological agents of dermatomycosis in Udaipur region [5]. The other dermatophytes included *T. tonsurans*

isolated from 3 cases (4.7%) and *T. violaceum* from 2 cases (3.1%).

Candida species were reported in 22 cases (34.3%) and were more likely to be isolated from finger-nail infections. Non-dermatophyte moulds accounted for 20.3 % and reported in 13 cases, with *Aspergillus* species being the most common pathogen.

In our study, most of the infections due to *T. rubrum* were found in adults, which was consistent with the observations of Desai and Bhat [6] and Ng *et al.* [7] *Candida* species have high incidence in finger onychomycosis and *T. rubrum* has a relatively low incidence.

4. Conclusion

The men and women, especially those are working as agricultural laborers and taking part in showing rice on field, are commonly suffering with these problems. Because of they are continuing in crop field, where moist and muddy soil along with fungal spore may cause harm to their skin and through the skin pathogen can easily invade dermis and cause infection. On other hand, the people drink river water that contained large number of parasites and worms. These parasites and worms carry fungal spores, May cause infection.

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