A STUDY ON THE PATTERN OF FUNGI CAUSING ONYCHOMYCOSIS IN A TERTIARY CARE HOSPITAL IN IMPHAL

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ABSTRACT

BACKGROUND

Onychomycosis is a fungal infection of the nails. It is caused by dermatophytes, non-dermatophytes and yeasts. In spite of improved personal hygiene and living condition, it continues to persist and poses a major clinical challenge regarding its treatment due to its chronicity.

The present study was conducted to identify the fungi causing onychomycosis in our region.

MATERIALS AND METHODS

This descriptive study was carried out in the Department of Microbiology at a tertiary healthcare centre in Manipur from August 2016 to August 2017. A total of 166 cases of clinically diagnosed cases of onychomycosis were taken up for study. After disinfecting the nails with 70% alcohol, collected nail samples were subjected to 20% KOH and culture was done on Sabouraud’s Dextrose Agar (SDA) with chloramphenicol. Identification of the isolates was done by microscopic and macroscopic examination.

RESULTS

Out of 166 samples KOH is positive in 54 samples (32.54%), of which culture is positive in 30 samples (18.07%) and 24 is culture negative (14.45%). Total culture positivity is seen in 52 samples (31.32%), of which 30 samples (18.07%) is KOH positive and 22 samples (13.25%) is KOH negative. Females are predominantly affected (64.45%). F: M is 1:8: 1. Most affected age group is 21-30 yrs. (30.12%). Candida species are the commonest species isolated (46.15%) and non-albicans Candida are more predominant (30.76%) followed by dermatophytes (28.94%). Trichophyton rubrum is the commonest dermatophyte isolated (15.38%).

CONCLUSION

The study showed the genus Candida as the main pathogen causing onychomycosis in our region. So, clinical onychomycosis should be confirmed both by KOH and fungal culture to prescribe specific antifungal drugs for optimal outcome.

KEYWORDS


Direct microscopy in KOH was positive in 54 samples (32.54%), of which culture was positive in 30 samples (18.07%). Total culture positivity was seen in 52 samples (31.32%), of which KOH was positive in 30 samples (18.07%) (Table 3). From the 52 culture positive samples Candida spp. were isolated in 15 cases (28.84%) of dermatophytes, of which 8 (15.38%) were Candida albicans and 16 (30.76%) were non-albicans Candida (NAC). It is followed by 3 cases (5.76%) of dermatophytes moulds accounts for 13 cases (25%), of which 3 (5.76%) were Fusarium spp., 2 (3.84%) cases each were Aspergillus niger and 1 case (.92%) each of Scopulariopsis, Scedosporium, Geotrichum, Alternaria and Exophiala dermatitidis (Table 4). Among the NAC, Candida tropicalis was predominant with 10 cases (19.23%) followed by C. guilliermondii 3 cases (5.76%), C. glabrata 2 cases (3.84%) and 1 case (1.92%) of C. parapsilosis (Table 5).

In our study, onychomycosis was noted more among the females than among males. Female-to-male ratio was 1.8: 1. This is in accordance to other studies like Arti et al., Ruchita et al., Neupane S et al.,10 This may be because women constantly submerge their hands in water for their household activities. Some studies like Ratna et al, Lone et al have shown greater male preponderance than female.11,12

In most of the studies, dermatophytes are the most encountered organisms in onychomycosis. But in our study the predominant pathogen was Candida species (46.15%), of which 8 (15.38%) were Candida albicans and Non-albicans Candida accounted for 16 cases (30.76%). Among the NAC, Candida tropicalis was predominant (19.2%) followed by C. guilliermondii (5.76%), C. glabrata (3.84%) and C. parapsilosis (1.92%) respectively. In our study, yeast was more predominant, which is similar to other studies.5,13,14 A shift from Candida albicans to non-albicans has been noted in our study. Among the dermatophytes isolated, Trichophyton rubrum (15.38%) was predominant followed by Trichophyton mentagrophytes (7.69%) and Trichophyton tonsurans (1.80%). This is similar to studies done by Rupali S.6 Non-dermatophyte moulds accounts for 25% of the total isolates, of which Fusarium spp. was predominant (5.76%). M. Leelavathi et al and Shrijana Gurung et al have also reported similar findings.15,16

## DISCUSSION
In the present study, the most common age group affected is 21 - 30 yrs followed by 31 - 40 yrs, which is in accordance to Veer et al, Rupali S, Shasir W et al and Grover et al.5,6,7 People of this age group are more involved in outdoor activities and are prone to fungal infection due to trauma. Moreover, young population are more apprehensive and regarded it as a cosmetic issue and approach clinician on time. Few authors have reported higher prevalence of onychomycosis in elderly age group. But in our study, only 4.21% of patients above 60 yrs. were affected. Children are least affected. Only 3.01% of the patients are found to be in age group of 0 - 10 yrs. This may be because children spend less time in the environment containing pathogens and they have faster nail growth and smaller nail surface for fungal invasion.5

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## CONCLUSION
The present study showed the emergence of Candida species as the most common cause of onychomycosis in our region with a shift from Candida albicans to Non-albicans Candida. Thus, there is a need for microbiological confirmation for the cases of onychomycosis to prescribe species specific antifungal for optimal treatment outcome.

## REFERENCES


