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Isolation of Fungal Air-Flora in the Wards and Environment of Two Tertiary Hospitals in the Southeast of Nigeria

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ABSTRACT

Dermatophytes have been observed to be the main sources of allergic dermatitis in hospitals and its environments. In a comprehensive study to isolate fungal air-flora in the wards and environment of two major teaching hospitals (University of Nigeria Teaching Hospital, UNTH and Enugu State University Teaching Hospital, ESUTH) in Enugu metropolis, Southeast of Nigeria, a total of 200 Sabouraud Destrose Agar (SDA) plates containing 50 mg/l chloramphenicol (S+C) to inhibit the growth of bacteria, were exposed at different sites (wards and environments). Of the 100 (S+C) plates exposed at different environmental sites in the two hospitals for 15 minutes separately, 98(98%) showed evidence of growth of fungal organisms while 2(2%) showed no significant growth. Ten (10) different fungal genera were encountered in an order of decreasingfrequency:*Trichophyton spp* 157(48.15%),*Aspergillus spp*80 (24.53%), *Clodosporium carionii*30(9.20%), *Rhizopus spp*23(7.05%), *Candida spp* 12(3.68%), Geotrichum candidum 11(3.37%), *Epidermophyton spp* 5(1.53%), *Syncephalastrum spp* 4(1.22%), *Penicillium spp* 3 (0.92%), *Fusarium spp*1(0.39%). *Trichophyton spp* was the highest isolate with 157(48.15%);*Fusarium spp* ranked least with 1 (0.30%). The remaining 100 plates (S+C), used to sample the different wards in the same hospital, were also shown to harbour fungal growth (100%) of which dermatophytes ranked highest Trichophyton species, T. mentagrophytes) 132(29.07%). The result showed that the difference in the total distribution of dermatophytes between UNTH and ESUTH was not statistically significant ($p>0.05$). However, the difference in the distribution amongst the non-dermatophytes was statistically significant ($p<0.05$). Furthermore, the difference in the distribution of dermatophytes and non-dermatophytes across the wards of the two teaching hospitals was not statistically significant ($p>0.05$). These findings suggest that these airborne fungi could act as opportunistic pathogens and could pose a serious health risk, especially to immunocompromised and elderly patients. Periodic surveillance and monitoring of indoor air flora should be encouraged by authorities of establishments, as this will greatly reduce fungal air flora within and around hospitals.

Keywords: Dermatophytes, Allergic dermatitis, Fungal air-flora, Hospital wards, Hospital environment

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