Aspergillus fumigatus with TR34L98H resistance allele causing complicated suppurative otitis media in Tanzania: Call for improved diagnosis of fungi in sub-Saharan Africa

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Abstract

Background: Suppurative otitis media (SOM) is a major public health concern worldwide and is associated with increased morbidity. Cases of fungal suppurative otitis media were studied to establish the effect of fungi in otitis media.

Methods: Ear swabs from 410 patients were collected aseptically using sterile cotton swabs from discharging ear through perforated tympanic membrane. Swabs were subjected to microscopic and culture investigations. The species of fungal growing on Sabouraud's agar were identified using MALDI-TOF MS. For moulds broth micro dilution method following EUCAST guidelines was employed to determine susceptibility patterns against itraconazole, voriconazole and posaconazole.

Results: A total of 44 (10.74%) cases with positive fungal culture growth were studied. The median age of patients with fungal infection was 29.5 (IQR 16-43) years. Of 44 patients; 35 (79.6%) had pure growth of one type of fungal. *Candida albicans* was the most common fungus isolated (n=13; 29.6%) followed by *Aspergillus versicolor* (n=8; 18.2%). A total of 7 (15.9%) patients had disease complication at time of enrollment; of them 6 (13.6%) had hearing loss. On follow up 7 (15.9%) had poor treatment outcome. All *Penicillium citrinum* isolates were resistant to voriconazole while all *Penicillium sumatrense* were resistant to both itraconazole and voriconazole. There were non-

significant association of poor treatment outcome and female gender, being HIV positive and being infected with moulds.

Conclusion: Fungal infections play a significant role in SOM pathology in our setting. Diagnosis of fungal infections in developing countries should be improved so that appropriate management can be initiated on time to prevent associated complications.