

SEROTYPES DISTRIBUTION AND DRUG SUSCEPTIBILITIES OF *CRYPTOCOCCUS NEOFORMANS* AND *CANDIDA ALBICANS* FROM CLINICAL SOURCES IN NAIROBI, KENYA

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The HIV epidemic in Africa has led to an increase in the incidence and morbidity due to opportunistic fungi. Cryptococcal meningitis and *Candida albicans* infections are some of the most commonly encountered conditions in clinical practice in Kenya. It is estimated that up to 40% of HIV/AIDS develop cryptococcal meningitis. Due to the high frequency and the severe clinical manifestations of *Cryptococcus* infection, we determined the serotype distributions and drug susceptibility profiles of *Cryptococcus neoformans* and *Candida albicans* from clinical sources.

Twenty-eight *C. neoformans* isolates from cerebrospinal fluids of patient with meningitis and thirty-two *Candida albicans* from sputum, blood culture, broncho alveolar lavage fluid and urine were serotyped and drug susceptibility determined. Preliminary identification was done on ChromAgar *Candida* and confirmed by Api 20 C aux (bioMérieux, France). Serotyping was done by slide agglutination test using *Candida* and Crypto Check antisera (Iatron Co., Japan). *Candida* susceptibility to amphotericin b, fluconazole, 5-fluorocytosin, and miconazole was done using Asty antifungal susceptibility testing for yeasts (Asty, Kyokuto, Japan). Susceptibility of *Cryptococcus* to amphotericin B was determined using broth microdilution technique.

All *C. albicans* isolates were serotype A while 19/32 (59.4%) had MIC $\geq 1\mu\text{g/ml}$ to amphotericin b. Only one strain of *C. albicans* had MIC $\leq 64\mu\text{g/ml}$ to 5-fluorocytosin while 2 and 6 strains were susceptible dose dependent (MIC of 16-32 $\mu\text{g/ml}$) to fluconazole and miconazole respectively.

Most [9/28 (32.1%)] *C. neoformans* isolates were serotype A the rest were either serotype D, AD or AB but there were 9/28 isolates which did not agglutinate with the typing sera. Seventy five percent of the *C. neoformans* isolates had MIC of 0.5 $\mu\text{g/ml}$ to amphotericin b while 4 isolates had MIC of $\geq 1\mu\text{g/ml}$. The rest of the isolates had MIC of $<0.25\mu\text{g/ml}$.

The study highlighted the high prevalence and significance of Cryptococcal infection in Kenya and the existence of different serotypes, there is need to establish a possible environmental source contributing to high cryptococcal infections in Kenya. There are some fungal strains with elevated MIC to antifungal drugs that needs to be further characterized. Due to HIV/AIDS pandemic, opportunistic fungal pathogens have increased significantly, therefore, there is a need to improve technical and infrastructural capabilities for diagnosis of fungal infections. Molecular characterization and drug resistance studies are essential for mounting appropriate clinical management strategies for fungal infections in third world countries.