HIV/Candida co-infection in Sub-Saharan African women on ART

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Abstract

Introduction: Sub-Saharan Africa has 23.5 million cases of HIV and is home to 92% of the world’s HIV-positive pregnant women of whom 24% die of pregnancy related complications. Oral candidiasis is a common condition in HIV/AIDS patients, caused by commensal yeasts which may colonise the mucous membranes of the mouth causing morbidity due to several factors including immunosuppression, smoking, poor nutrition and the use of antibiotics.

Methods: One hundred and ninety-four South African and Cameroonian HIV-positive women participated in the study. Only subjects who had white pseudomembranous plaque on the tongue or visible oral candidiasis were included. Samples were collected by scraping the patient’s oral mucosa and tongue with a sterile swab. Candida species were differentiated using selective and chromogenic media and their susceptibility to antifungal drugs was tested using the TREK Sensititre system.

Results and conclusion: One hundred and ninety-six isolates, representative of six Candida species were identified. C. albicans was the predominating species, with C. glabrata and C. dubliniensis being the more frequent of the non-albicans species. Azole drug resistance patterns were very high for C. albicans, while C. glabrata showed high resistance patterns to echinocandins drugs. The duration of ART could be associated with the presence of different Candida species but no concrete conclusions could be drawn concerning HIV/Candida co-infection when controlling for other risk factors such as HIV stage, pregnancy, age and treatment for tuberculosis. This may be a cause for concern, particularly in the case of pregnancy, where co-infection may pose a risk for maternal morbidity and mortality.

Discussion

The high levels of antifungal drug resistance seen in this cohort of women is worrying and deserves further attention, especially since the drug of choice for Candida infections in the African continent (fluconazole) was found to be ineffective against a large amount of clinical Candida isolates. This is also a cause of concern due to the fact that only albicans species (which expressed the highest resistance levels to azoles) were found in pregnant women, which could pose a risk for pre-term delivery and maternal morbidity and mortality [8].

The shift from C. albicans to the more drug-resistant non-albicans species seen after continued ART is also a cause of concern that has not been previously documented. We propose better monitoring of these patients, as the emergence of non-albicans species and the empirical dispensation of antifungal drugs in resource-limited healthcare facilities might not be effective in treating Candida infections in these populations.

References


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