

Seroprevalence of *Cryptococcus Neoformans* in Human Immunodeficiency Virus Positive Patients attending Aminu Kano Teaching Hospital Kano, Nigeria

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Abstract

The HIV pandemic has greatly contributed to the emergence of opportunistic fungal infections. Over the last two decades *Cryptococcus neoformans* infection is estimated to cause more than 500,000 deaths annually among HIV positive subjects in sub-Saharan Africa. However, in this environment scant attention has been paid to the screening of this infection. This study was therefore designed to determine the prevalence of *Cryptococcus neoformans* in the serum of HIV positive subjects attending HIV treatment centre in Aminu Kano Teaching Hospital, determine the relationship between the immune status with seroprevalence of the infection and to determine the risk factors associated with the infection. Blood was collected by venepuncture and CD4 count was determined using Partec flow cytometer. One hundred and fifty HIV positive subjects on Highly Active Antiretroviral Therapy with a CD4 count ≤ 200 cells/ μ L were recruited for the study. All subjects were grouped based on their CD4 counts into: 200-150, 149-101, 100-50 and <50 cells/ μ L. The test for *Cryptococcus neoformans* was performed using cryptococcal antigen (CRAG) lateral flow assay detection kits. Of 150 HIV positive subjects, 6(4.0%) were positive for serum CRAG. Positive subjects with CD4 count ≤ 50 cells/ μ L had the highest prevalence of serum CRAG. Moreover, high seroprevalence was observed in subjects that had contact with bird droppings. This study showed a prevalence of 4.0% serum CRAG among HIV positive subjects that are on HAART. It is therefore recommended to implement CRAG screening strategy targeting HIV positive subjects with lower CD4 counts.

Keywords: *Cryptococcus neoformans*, HIV, CRAG, CD4 count.

1. INTRODUCTION

The HIV pandemic has greatly contributed to the emergence of opportunistic fungal pathogens and increased incidence of infections over the last two decades. Cryptococcosis is an opportunistic mycosis, caused by an encapsulated yeast *Cryptococcus* species complex (*Cryptococcus neoformans* and *Cryptococcus gattii*) (Lin et al., 2006 and Dzoyem et al., 2012).

Cryptococcus neoformans is the most important pathogen responsible for most clinical cases among the *Cryptococcus* species complex. It has a global distribution and accounts for more than 90% of all cases of Cryptococcosis (Litvintseva et al., 2005, Eileen and John 2016).

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