

## Cerebrospinal Fluid Cryptococcal Antigen Titers at 1-Year Following Successful Antifungal Treatment: A Descriptive Study

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### Abstract

**Background:** Cryptococcal Meningitis (CM) contributes up to 19% of AIDS-related mortality. Cerebrospinal Fluid Cryptococcal antigen (CSF CrAg) titers have been shown to positively correlate with the cryptococcal quantitative fungal culture and to predict 2-week mortality. However, the evolution of CSF CrAg titers after 1-year of successful treatment of CM is unknown.

**Objective:** We set out to describe changes in baseline CSF CrAg titers at one year post antifungal therapy.

**Methods:** Following diagnosis and treatment of HIV related meningitis, survivors of CM are enrolled in an open cohort. At the 1-year follow up visit, lumbar punctures were performed for consenting participants. CSF CrAg titers were then compared to their baseline titers. Participants' variables were summarized as proportions, medians with interquartile ranges or means with standard deviations as appropriate. Wilcoxon matched-pairs signed rank test was used to determine a difference in the CrAg titers at baseline and 1-year post diagnosis.

**Results:** Of the 21 Ugandan survivors of CM, 13/21 (62%) were male. At baseline, median CD4 count was 29 cells/mL (IQR 14-49) and median CSF quantitative colon count was 800,000 CFU/ml (IQR 70,600-2,792,500). The median CSF CrAg titer at baseline was 1:2560 (IQR 960-1024) and 1:5.0 (IQR 0.0-25) at 1 year. Eight of the participants (38%) had a negative CSF CrAg test at 1 year. The mean  $\pm$  SD decline of the CSF CrAg titer and dilutions at 1 year were  $5886 \pm 6810$  and  $7.5 \pm 3.1$  respectively which were statistically significant (Spearman's  $r_2 = 0.39$ ;  $p < 0.0001$ ).

**Conclusions:** As expected, there was a significant decline in the CSF CrAg titers at 1-year following successful antifungal therapy. One third of patients had turned CrAg negative after one year. Titers may be useful to clinicians in distinguishing microbiological CM relapse from other causes of recurrence of symptoms in patients with prior history of CM.

**Key words:** Cryptococcal Meningitis (CM), Cerebrospinal fluid cryptococcal, HIV related meningitis