

Influence of HIV positivity on sputum smear conversion among patients treated for smear positive pulmonary tuberculosis in a regional hospital in Mpumalanga; A retrospective cohort study

Student: Chidimma Ubeh

Supervisor: Dr Ochodo

Background: Current recommendation for TB treatment proposes two months of treatment with anti-TB medications (intensive phase) after which conversion from sputum positive to negative is expected to have occurred. However, it is possible that longer duration of anti-TB treatment (intensive phase) is required to achieve sputum smear conversion among HIV/TB co-infected patients. We studied the average time to sputum smear conversion among smear positive HIV negative and smear positive HIV positive pulmonary TB patients in a regional hospital in Mpumalanga, South Africa to determine any difference among them. The average time to sputum smear conversion among HIV positive patients on HAART was also compared to that of HIV positive patients not on HAART.

Method: Patients diagnosed with smear positive pulmonary TB that had undergone or are undergoing treatment for TB between 2012 and 2018 were enrolled in the study and divided into two groups; HIV positive group and HIV negative group. They were followed from the time of initiation of anti-TB medication to the time they achieved sputum conversion to smear negative. Data analysis using the Kaplan-Meier

survival analysis was done to compare the time to sputum conversion between the HIV positive group and HIV negative group.

Result: A total of 221 cases with smear positive pulmonary TB were enrolled in this study. Of these, 67.9% were HIV positive, 27.1% were HIV negative while 5% of patients have unknown HIV status. From the Kaplan-Meier estimate done, the median time to sputum smear conversion among HIV positive group is 60 days while that of the HIV negative group is 61 days. Hence, this study showed no statistically significant difference in the time to sputum smear conversion between HIV positive and HIV negative groups (Log rank p-value = 0.903)

Conclusion: There is no statistically significant difference in the time to sputum smear conversion from smear positive to smear negative among HIV negative and HIV positive patients treated for smear positive pulmonary TB. However as our findings were limited by a small sample size, we recommend further research to determine the influence of HIV infection and level of HIV immunosuppression on sputum smear conversion.