Treatment Outcomes and Associated Factors among Tuberculosis-Human Immunodeficiency Virus Co-infection Patients at Bicol Medical Center: a Retrospective Cohort Study

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ABSTRACT

Background: Human Immunodeficiency Virus (HIV) infection is the single greatest risk factor for developing active Tuberculosis (TB). Additionally, TB-HIV co-infection is a major public health problem worldwide especially in developing countries. Monitoring of treatment response is one of the important cornerstones of disease treatment.

Objective: This study aimed to assess the prevalence of TB-HIV co-infection, to determine treatment outcomes, and to identify factors that affect outcomes among patients who completed TB treatment at Bicol Medical Center (BMC), a tertiary hospital in the Philippines, from 2018 to 2022.

Methods: The investigators employed a retrospective cohort design. Participants were HIV-confirmed and TB diagnosed patients who have completed the standard TB treatment. Data were collected via medical charts review and analyzed using Stata MP version 17 software. Screening of potential factors affecting treatment were entered into a regression model using simple logistic regression analysis. Model building was done by multiple logistic regression analysis with Firth's bias correction and backward elimination technique to determine the factors associated treatment outcome.

Results: Four hundred three patients were enrolled in BMC treatment hub from 2018-2022. Of these, 142 (35.24%) also had TB with the median time of diagnosis at 0 months (almost same time of establishment of diagnosis). Majority of patients has a median age of 31 years old (early adults), were mostly males (93%), high-school and college graduates (42%), and employed (69%). They were mostly bacteriologically-confirmed cases (63%), with low CD4 cell count of <200 cells/uL at the time of TB diagnosis (82%). Sixty three percent were in the advanced disease stage (HIV stage 4). There were 61% of patients who had successful TB treatment outcomes. Patients who were unemployed, bedridden, and with HIV stage 4, have higher odds of poor TB treatment outcome.

Conclusion: The prevalence of TB among HIV patients at BMC was high, whereas successful TB treatment outcome remain low. Poor TB treatment outcome among these patients is associated with low functional status, and advanced disease clinical stage. A wider multi-center study may be done in order to explore the other additional clinical and social factors in order to enforce the current strategies in addressing this disease double burden.

BIOGRAPHY

Dr. John Paul A. Taday is a young physician researcher who pursues his passion for improving current strategies for the management of Tuberculosis and HIV. He is a graduate of Doctor of Medicine – Masters in Public Administration (Major in Health Emergency and Disaster Management) double-degree program from Bicol University – College of Medicine, a premier state university in the Bicol Region, Philippines. He also pursued Internal Medicine specialization residency training from Bicol Medical Center, which is a tertiary state-run hospital in the Philippines.

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