PLASMA ADIPONECTIN HORMONE LEVELS IN HIV AND TB CO-INFECTED NON-INJECTION DRUG USERS FROM MOMBASA COUNTY, KENYA

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ABSTRACT

Human immunodeficiency virus (HIV) and tuberculosis (TB) co-infections are the main cause of increased morbidity and mortality in Kenya. Most of the antiretrovirals (ART) used in management of HIV/AIDS are associated with dysregulation in adiponectin hormone levels. Low adiponectin levels are associated with insulin resistance, dyslipidemia and fat redistribution in HIV patients on combined ART. Altered levels of adiponectin are also associated with tuberculosis infection. Recently, the concentration of adiponectin in plasma has been used to assess severity of pulmonary TB in TB affected patients. Although there are profound metabolic alterations in HIV and TB co-infected patients, the levels of adiponectin as well as their association with clinical outcomes including among others, CD4 counts, HIV-1 viral loads and BMI in HIV and TB co-infected patients has not been ascertained. This study, hence seeks to determine the levels of adiponectin, CD4 counts, viral loads and anthropometric measures in the following groups of non-injection drug users from Mombasa County: - HIV and TB co-infected patients, HIV mono-infected patients, TB mono-infected patients and Healthy controls. HIV infected groups will further be divided into ART- naïve and ART-exposed groups. Adiponectin levels will be measured using sandwich enzyme linked immunosorbent assay (ELISA) technique, CD4+ T-cell counts will be enumerated by the FACSCalibur machine while HIV-1 viral loads will be determined by real time polymerase chain reaction (PCR). SPSS Version 19.0 will be used to analyze the data obtained. Parametric data including adiponectin levels, CD4 counts, and anthropometric data will be summarized as medians and presented as box plots. Statistical comparisons across groups will be performed using non-parametric ANOVA tests followed by post-hoc Bonferroni correlation for multiple comparisons. Spearman's rank correlation tests will be used to determine the association between adiponectin levels and HIV-1 disease outcomes. All tests will be two-tailed and an α-value of 5% ($p<0.05$) will be used for statistical inferences. This study will provide data on adiponectin levels in HIV and TB co-infected non-injection drug users from Mombasa County and their association with HIV-1 clinical outcomes. The results will also be important in the understanding of disease progression, staging and monitoring ART and TB treatment during HIV and TB co-infection.