SUMMARY

A review of literature reveals that sub-Saharan Africa bears the heaviest burden of the Human Immunodeficiency Virus (HIV) infection and tuberculosis in the world. Tuberculosis (TB) has been endemic in sub-Saharan Africa, but has increased in incidence with the advent of HIV infection in the last two decades. It is the commonest infection and cause of death associated with immune suppression from HIV infection. The presentation of tuberculosis in this setting is altered depending on the immune status of subject. Several studies into the immune status as well as state of immune activation of HIV positive and HIV and TB co-infected subjects have carried out in many centers around the world. Some attempts have also been made to find easier and cheaper surrogates for the CD4+ cell count as a means of staging, monitoring progress of disease and response to therapy in resource poor countries like Nigeria. This study was carried out to evaluate the cellular immune status and state of immune activation in HIV and TB co-infected subjects in Nigerians in Zaria and to correlate the findings with the clinical and radiological changes with a view to finding a surrogate test for staging and monitoring response to therapy of both diseases.
in place of the CD4+ cell estimation which is costly and requires use of high technology..

The study was carried out in the department of medicine, Ahmadu Bello University Zaria from March 2007 to December 2008. The study subjects were seventy-five patients who presented newly with symptoms of either disease and who in the course of evaluation were found to be co-infected with HIV and TB. There were two groups of controls made up of thirty-five HIV negative tuberculosis patients and twenty apparently healthy persons (volunteers).

The study subjects were mainly in the reproductive age group (mean age 34.03 ± 8.34 years). Housewives, traders and students were the main occupational groups affected and were mainly infected with HIV-1 subtype. The mean duration of illness prior to presentation was 5.72 ± 3.27 months. Common presenting symptoms were cough, dyspnoea, fever, appetite and weight loss, and diarrhea. Oral thrush, lymphadenopathy, hepatomegaly, splenomegaly and dermatitis were the most frequent clinical signs indicating co-infection with HIV and TB. Among the clinical features, oral thrush best predicted advanced immunosuppression (CD4+ ≤ 200 cells/l).
The mean CD4+ counts of study subjects was 178 ± 116.81 cells/ul indicating severe immune suppression. Mean serum beta-2-microglobulin (B2M) level was 3.29mg/L, mean tuberculin skin test (TST) reaction was 5 ±6.7mm and erythrocyte sedimentation rate (ESR) was 67.88 ±37.32mm/hr, which were statistically significantly different from the TB controls. The ESR and TST had predictive value for CD4+ count in co-infected subjects. Sputum smear negative pulmonary tuberculosis (PTB) was common and a high incidence of extra pulmonary disease was also noted.

Atypical chest radiological features were found in eighty–four percent of HIV/TB study subjects. The mean CD4+ count of those with these atypical features was lower and statistically significantly different from those of HIV/TB subjects with typical features and the TB only controls. Lower zone infiltrates, mediastinal adenopathy, and milliary shadows as well as paucity of upper zone lesions were the most frequently occurring changes. They were predictive of HIV co-infection in tuberculosis. Milliary shadows best predicted advanced immunosuppression (CD4+ count ≤ 200cells/uL) among the radiological features.
There were statistically significant differences in the mean CD4+ counts, B2M levels, and radiological changes between HIV/TB study subjects and TB controls.

Tuberculosis in HIV infection occurred mainly in the setting of moderate and severe immune suppression (CD4+≤ 350 cells/μL) and extra pulmonary disease was common. Subjects were late in seeking appropriate medical attention.

It was recommended that public education be enforced to encourage early presentation to hospital and that HIV/TB co-infected patients in our environment should be started on antiretroviral drugs before completion of TB therapy.

More sensitive and specific diagnostic tests should be employed in TB diagnosis in the setting of HIV co-infection.