

Abstract

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Natural killer cells and selected enzyme/metabolite profile during HIV infection and clinical progression to AIDS

Presented by Ezekiel Onyonka Mecha, Kenya.

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Objectives: This study sought to evaluate the role of Natural killer cells in HIV infection. It's correlation with CD4+, CD8+ cell numbers and CD4/CD8 ratio during HIV infection and clinical progression to AIDS. Also the correlation of NK cells and liver, kidney enzymes and metabolites was studied during HIV/ AIDS progression. The study further evaluated the possible causes of anemia that is usually observed in AIDS patients.

Methods: Blood samples were obtained twice at an interval of six months from 17 HIV infected ARV naive patients and 3 HIV-negative patients. NK, CD4+, CD8+ cells and CD4/CD8 ratio were identified and quantified by flowcytometry. Liver and kidney function enzymes and metabolites were measured. CBC parameters including RBC count, Hgb, Hct, MCV, RDW, MCH and MCHC as well as albumin, ferritin and bilirubin were measured to determine the possible cause of anemia that is observed in AIDS patients

Results: 94% of HIV positive samples analyzed showed that HIV progression was associated with a decrease in NK cell counts. There was a positive correlation between NK, CD4+ and CD4/CD8 ratio. 90% of HIV positive samples analyzed correlated negatively with CD8+ during HIV/AIDS progression. Also high NK was associated with elevated levels of liver marker enzymes. Patients had low levels of Rbc, Hgb, and Hct, MCH and MCHC. However serum levels of albumin, ferritin and bilirubin were normal. These parameters were normal in all HIV negative patients but the albumin and bilirubin serum levels were above the normal reference ranges

Conclusions: Natural killer cells along with CD4+ cells and CD4/CD8 ratio can be used as marker for HIV/AIDS progression and also anemia usually observed in HIV-positive patients may possibly result from poor absorption of iron from the gut.

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