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Altered leucocyte functions in HIV infected subjects

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Polymorphonuclear neutrophils play an important role in host defense and they have the ability to recognize and phagocytose bacteria and other microorganisms. Previous studies have shown that, leucocyte functions are impaired in human immunodeficiency virus infection. This study was undertaken to investigate changes of phagocytic function and oxidative burst activity occurring in HIV infected subjects. A total of 191 patients were recruited for this study, comprising 58 HIV negative individuals (control), 72 HIV infected subjects that are not on antiretroviral therapy and 61 HIV infected subjects on antiretroviral therapy. Trypan blue was used to determine viability test, Nitroblue Tetrazolium test was used to measure the oxidative burst and phagocytosis was assessed by incubating leucocyte suspension with *Escherichia coli* and measuring the ability of leucocytes to ingest bacteria. The CD4 cell count and CD8 cell count was analyzed using BD FACSCount auto analyzer. Our results showed significantly decreased phagocytic function and oxidative burst activity ($p<0.05$, respectively) in the HIV group both on ART and not on ART (untreated group) as compared with the controls group. Similarly, a significant ($p<0.05$, respectively) decrease in leucocytes viability was observed in both HIV groups compared with controls. Furthermore, leucocyte viability of HIV infected subjects who were not on ART were significantly reduced ($P<0.05$) when compared with HIV infected subjects on ART. This finding may suggest that leucocytes from HIV infected individuals have impaired ability to phagocytose and undergo oxidative burst activity, however may contribute to the increased risk of bacterial infections in HIV-infected subjects. It was observed that oxidative activity and phagocytic function was inversely correlated to the change in CD4 count value, that is, the greater the CD4 value the better the oxidative activity and phagocytic function. It is recommended that further studies on mechanisms of failure of phagocytosis and oxidative burst potentials of HIV infected subjects.

Biography

Rosemary Omomo Ekpeh is a graduate of Medical Laboratory Science with a bias in Hematology and Blood Transfusion Science. She is currently pursuing MSc in Hematology at the University of Benin, Nigeria. She works as a Medical Scientist with the APIN/PEPFAR Laboratory of Edo State Health Management Board.

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