

IMMUNOTHERAPEUTIC TREATMENT OF HIV-1: REVIEW OF SAFETY AND EFFICACY

Kariuki, SM_{2,3}, Musyoki, SK₁ and Kemoi, EK_{3,4}

1School of Health Sciences, Kisii University, P.O Box 408-40200, Kisii, Kenya;

2School of Health Sciences, Mount Kenya University, P.O BOX 2591-30100, Eldoret, Kenya;

3Institute of Tropical Medicine and Infectious Disease, Jomo Kenyatta University of Agriculture and Technology (J.K.U.A.T)
P.O. Box 62000, 00200 Nairobi, Kenya;

4School of Science and Technology, University of Kabianga, P.O Box 2030-20200, Kericho
Kenya.

Abstract

Background: For over two decades, the treatment of HIV-1 patients has relied on antiretroviral (ART). These drugs have had a great deal of achievement in not only controlling the viral load but also partly reconstituting the immune system in HIV-1 infected persons. However, the misfortune is that ART is a lifelong treatment because it cannot achieve complete eradication of HIV-1 virus, yet with its side effects like many other drugs. Scientists have hence introduced immunotherapy in an effort toward complete eradication of HIV-1 in HIV/AIDS patients.

Objective: The aim of this paper was to determine the effectiveness and safety of the various immunotherapy formats used in the treatment of HIV-1 infection.

Method: We reviewed a number of peer-reviewed published articles to determine the effectiveness and safety of the different immunotherapy formats tested in randomized clinical trials and animal model experiments.

Results: Majority of immunotherapy regimens used in combination with ART to treat HIV-1 positive human or animals were found to be effective in boosting the cell-mediated immune responses in HIV-1 infection but achieved insignificant results in controlling the viral load in these experiments. Most of the immunotherapy formats were also well tolerated recording minimal to no adverse effects on HIV-1 patients.

Conclusion: Most immunotherapy agents are relatively effective and safe when used in combination with ART in modulating immune response to HIV-1. These immunotherapy agents do not significantly reduce the viral load and hence cannot eliminate HIV-1.

Key Words: Immunotherapy, HIV-1, ART, HIV/AIDS, Effectiveness, Efficacy, Safety