

Abstract

Project Code: MRG4780055
Project Title: Functional study of freshly isolated peripheral blood dendritic cells in HIV infected and AIDS patients before and after antiretroviral drug therapy
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Several reports have shown that during HIV infection there was a progressive decline in the number of blood DCs. Loss of DCs would lead to a reduction of T cell responses. Also the highly active antiretroviral therapy (HAART) has shown to reduce the HIV viral load and restore the number of CD4 T lymphocytes. Therefore, we studied DC function in stimulating allogeneic T cell proliferation and Th1/Th2 cytokine responses of allogeneic T cells after co-cultured with peripheral blood DCs isolated from HIV negative and HIV infected blood samples with CD4 count more or less than 200 cells/ μ l. DCs isolated from patients on HAART have also been studied. Freshly isolated DCs had a severe impaired function in stimulating allogeneic T cell proliferation and in inducing Th1 and Th2 responses especially in DCs from those with CD4 counts lower than 200 cells/ μ l. Following antiretroviral drug therapy, the function of DCs was partially restored at 6 months and remained lower than that of HIV negative volunteers. Th2 cytokine response seem to be affected more than Th1 response and this reflects the impairment of plasmacytoid DCs since these cells are capable of inducing Th2 response. However, DCs isolated in this study were total peripheral blood DCs. Since the two subsets of DCs seem to have distinct function in HIV pathophysiology, the role of the two distinct subsets of DCs in HIV infection and the dynamic of these cells after retroviral drug therapy need to be studied.

Keywords: Dendritic cells, HIV, Cytokines