The 29th Annual Canadian Conference on HIV/AIDS Research
Le 29e Congrès annuel canadien de recherche sur le VIH/sida

Session: **BS4**: Sunday May 3 – 11:00:12:30 – HIV Pathogenesis and Animal Models

Track:	Basic Sciences
Subject:	HIV Pathogenesis and Animal Models
Presentation Type:	Oral
Title of Abstract:	**Impact of Early Antiretroviral Therapy on B and CD4 T Cell Dynamics in Lymphoid Tissues of SIV Infected Rhesus Macaques**
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Abstract

In SIV-infected rhesus macaques, previous studies showed an early loss of splenic and mesenteric CD4 T cells. To date, under antiretroviral therapy (ART), HIV-infected patients exhibit low viral load along with restoration of CD4 T cells counts. However, we and others had recently showed that despite early ART, HIV and SIV can persist in lymphoid tissues as spleen and mesenteric lymph nodes, resulting in viral rebound when treatments are interrupted. Therefore, viral persistence may impact T and B cell dynamics in deep tissues. Herein, we addressed the impact of early ART on B and CD4 T cells in lymphoid tissues in SIV infected rhesus macaques.

Rhesus macaques (RMs) were infected with SIVmac251 (20 AID50) and treated at day 4 with a cocktail of antiretroviral drugs. RMs were sacrificed under ART, and after ART interruption (ATi). In addition to peripheral blood, spleen, mesenteric lymph nodes (MLN) and peripheral lymph nodes (PLN) were recovered. Cells were stained with specific antibodies and analyzed by flow cytometry. We also evaluated the viral load in ART and ATi monkeys.

We provide evidences that early ART restore efficiently CD4 T cells in MLN, PLN, spleen and blood. However, in reservoir tissues (MLN and spleen) in which SIV persists, Tfh cells as well T effector memory cells (TEM) are partially restored compared to the blood and PLN. Moreover, we observed that B cells expressed higher levels of CD95 and PD1 under ART compared to healthy RMs that persist after ATi. We further addressed the presence of specific SIV antibodies to assess viral recognition.

These results indicated that early ART does not fully restore immune system as “naïve” suggesting that persistent viral reservoir impairs immune response.

Funding : CIHR, CANCURE and CRC program.Fellowships : Université Laval (Fonds de recherche sur le Sida), Fondation du CHU de Québec.