conferenceseries.com PULSUS WWW.PULSUS.COM

J Microb Biochem Technol 2017, 9:4 (Suppl)
DOI: 10.4172/1948-5948-C1-029

CO-ORGANIZED EVENT

International Conference on Chronic Diseases
&
6th International Conference on Microbial Physiology and Genomics

August 31-September 01, 2017 Brussels, Belgium

Imparting protection from HIV infection: determining if inducing T cell immune quiescence modifies the immune response to recall antigens

Monika M Kowatsch[1], **Lucy Mwangi**[2], **Joshua Kimani**[1,2], **Julius Oyugi**[1,2], **Julie Lajoie**[1,2] and **Keith R Fowke**[1,2]
[1]University of Manitoba, Canada
[2]University of Nairobi, Kenya

Background: Despite continual effort from the HIV prevention community, there are 2 million new HIV infections yearly suggesting new HIV prevention methods are needed. HIV targets host immune CD4+ T cells, decline in these cells after HIV acquisition leaves individuals susceptible to infection. Despite intense exposure to HIV, some individuals remain HIV uninfected, this resistance is associated with a resting immune state, termed Immune Quiescence (IQ). IQ is defined as: reduction in levels of proinflammatory cytokines, chemokines, and number of HIV target cells. Our lab conducted studies to induce IQ in women using safe and globally affordable anti-inflammatory drugs: acetylsalicylic acid and hydroxychloroquine. Both drugs decreased the number of HIV target cells in the blood and genital tract. It is unknown whether induction of IQ is detrimental to normal immune function, required to prevent or control infections. The strength and specificity of the immune response before, and after, the induction of the IQ must be determined.

Hypothesis: The induction of immune quiescence using anti-inflammatory drugs will not suppress the immune response to recall antigens.

Objectives: The objective of the study is to establish balance between reducing inflammation and HIV target cells without adversely affecting the immune response.

Methods: Cell mediated immunity (CMI) assessed through proliferation and activation of T cells in response to recall antigens, cytokine and chemokine levels before and after stimulation. Humoral immunity is assessed through antibody levels in the plasma before and after drug treatment.

Results: Three-day peptide pool stimulation generates a CMI response among normal donors and proliferation of T cells in response to peptide pool stimulation can be detected after 7 days. No change in cytokine or chemokine expression was observed at either the CVL with either drug.

Significance: If this study can demonstrate that balance has been achieved, inducing IQ through anti-inflammatory drugs could be a new tool in the HIV prevention arsenal.

umkowats@myumanitoba.ca