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# Phenotypic and functional assessment of peripheral blood dendritic cells in HIV/HCV co-infected patients undergoing Interferon/Ribavirin combination therapy

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HIV/HCV co-infection represents a significant burden on global economy and public health. It is now widely accepted that HIV accelerates the course of HCV-related chronic liver disease. The current standard treatment for treating HCV infection in HIV/HCV co-infected patients is a combination of pegylated interferon (IFN) and an antiviral drug ribavirin (RBV). This treatment is successful in only 50% of the patients and is associated with significant side effects. Therefore, it becomes necessary to determine the predictive host factors of successful treatment response. Since dendritic cells (DCs) play an important role in orchestrating innate and adaptive immune response against pathogens, we hereby investigate DC-based markers of treatment response to the combination therapy in a cohort of HIV-1/HCV co-infected individuals including non-responders (NRs), sustained virological responders (SVRs) and relapsers. Using a recently developed 13-color polychromatic DC antibody cocktail, mononuclear cells from patients isolated at different time points (baseline, week 1, 2, 4, 24 and 48) during the course of therapy were analyzed for various markers of myeloid and plasmacytoid DCs. We studied the frequency of mDCs ($Lin\text{-}1^{-}/CD11c^{+}CD123^{-}$) and pDCs ($Lin\text{-}1^{-}/CD11c^{-}CD123^{+}$) as well as markers of DC activation (HLA-ABC, HLA-DR, and CD86) and adhesion (CD54 and CD62L). We also analyzed chemokine receptors (CCR5 and CCR7), HIV entry receptor CD4 and death receptor ligand (PDL)-1 on DCs. Statistical analyses of data revealed CD62L and CCR7 to be potential markers of early treatment response. Ongoing studies involve transcriptomics and proteomics analysis of differential response between SVRs and NRs, which is likely to contribute towards effective therapeutic management of HIV-1/HCV co-infection.

## Biography

Mohit Sehgal is a 2nd year Ph.D. student in the laboratory of Dr. Pooja Jain who is an Associate Professor in the Department of Microbiology and Immunology, Drexel University College of Medicine (DUCOM), Philadelphia, USA. Mr. Sehgal is studying the role of dendritic cells during HIV-1/HCV co-infection in order to delineate the complex interplay of host-pathogen interaction during two chronic viral infections vis-à-vis IFN/Ribavirin combination therapy.

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