OMICS Group Conferences
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International Conference on
Clinical & Cellular Immunology

October 22-24, 2012 DoubleTree by Hilton Chicago-Northshore, USA

# Transient liver injury associated with the early recovery of hepatitis C virus-specific T cell responses in HIV-1/HCV co-infected patients undergoing highly active antiretroviral therapy

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**Objectives:** HIV-1/HCV co-infection accelerates the progression of liver disease to cirrhosis, particularly in individuals with low $CD4^+$ T cell counts. Highly active antiretroviral therapy (HAART) can significantly increase HCV-specific T cell responses; however, it remains unclear whether the restoration of HCV-specific T cells by HAART is associated with liver injury in these co-infection patients.

**Methods:** A total of 32 HIV-1/HCV co-infected patients and 14 HCV mono-infected patients were enrolled, and 13 co-infected patients were initialized HAART and followed-up for 6 months. HCV-specific interferon-γ responses to HCV core and NS3A proteins were examined by enzyme-linked immunosorbent spot.

**Results:** HCV-specific interferon-γ responses to HCV core and NS3A proteins were impaired in HIV-1/HCV co-infected patients as compared with those in HCV mono-infected patients. The impaired HCV-specific T cell responses could be efficiently restored during the early phase of HAART, independent of HCV status, and were positively associated with increased CD4 T cell counts. In addition, this recovery of HCV-specific T cell responses occurred simultaneously with elevated serum ALT levels in HCV viremic patients and in patients with HCV rebound, but not in HCV non-viremic patients after 6 months of HAART.

**Conclusion:** The recovery of HCV-specific T cell responses by HAART may lead to transient liver injury in patients with HIV-1/HCV co-infection, suggesting that early anti-HCV therapy before HAART may reduce the risk of liver injury and therefore may be beneficial to HIV-1/HCV co-infected patients.

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