Macrophages: do they impact AIDS progression more than CD4 T cells?

Marcelo J. Kuroda, MD.,Ph.D.
Chair, Associate Professor of Microbiology and Immunology
Division of Immunology, Tulane National Primate Research Center,
Tulane University Health Science Center

It is widely accepted that destruction of CD4+ T cells is the primary cause of immunodeficiency manifested by opportunistic infections in HIV-1 infected humans as well as in SIV-infected macaques. However, the mechanisms that dictate the tempo of disease progression have yet to be elucidated. Not all infected individuals with low CD4 count progress similarly to AIDS. Macrophages, an important cell component of the innate immune system and link between innate and adaptive immunity, are also important targets of HIV/SIV infection. We propose that monocyte/macrophage lineage cells play an important role in the pathogenesis of AIDS. We show that damage to CD4+ T cells is important and readily apparent, but damage to monocyte/macrophage lineage cells, although less obvious, provide the missing link to predict the onset of opportunistic infections and progression to AIDS.