Retrovirology

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Oral presentation

HIV-1-Specific T Cell Function During Acute HIV-1 Infection

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HIV-1-specific CD8+ T cells in primary infection are associated with the dramatic decline of peak viremia to the viral set point, while their antiviral activity in chronic infection is less apparent. Here, we comparatively analyzed functional properties of HIV-1-specific CD8+ T cells in primary and chronic infection, and demonstrate that the functional avidity and TCR affinity of HIV-1-specific CD8+ T cells was consistently higher in primary infection than in chronic infection. The change of TCR affinities between primary and chronic infection was linked to an almost complete switch in the clonotypic composition of epitope-specific CD8+ T cells, resulting from the preferential loss of high-avidity CD8+ T cell clones. These data suggest that the initial recruitment of high-avidity HIV-1-specific CD8+ T cell may contribute to the control of HIV-1 viremia during primary infection, while their selective elimination during the subsequent disease process contributes to the loss of immune control during chronic infection.