PD-1 Expression on HIV-Specific T Cells Is Associated With T-Cell Exhaustion and Disease Progression


Upregulation of PD-1 Expression on HIV-Specific CD8\(^+\) T Cells Leads to Reversible Immune Dysfunction


PURPOSE OF THE STUDIES. Recent evidence from a mouse model of chronic viral infection suggests a crucial role for the programmed death 1 (PD-1)/programmed death 1 ligand (PD-L1) signaling pathway in downregulating the functions of virus-specific CD8\(^+\) T cells. PD-1 is an inhibitory receptor that negatively regulates activated T cells, and it is markedly upregulated on the surface of “exhausted” virus-specific CD8\(^+\) T cells in mice. HIV similarly induces a virus-specific impairment of T-cell functions. The purpose of these 2 studies was to investigate the expression of PD-1 on HIV-specific T cell in patients infected with the virus.

STUDY POPULATION AND METHODS. Both studies evaluated subjects with HIV and healthy controls and compared PD-1
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