Retrovirology

BioMed Central

Oral presentation

Amplified HIV Transmission: The Missing Link in the HIV Pandemic?

MS Cohen*‡, C Pilcher, JJ Eron, PA Leone, SA Fiscus and R Swanstrom

Address: University of North Carolina, Chapel Hill, North Carolina, USA

Email: MS Cohen* - mscohen@med.unc.edu

* Corresponding author ‡Presenting author

from 2005 International Meeting of The Institute of Human Virology
Baltimore, USA, 29 August – 2 September 2005

Published: 8 December 2005

Retrovirology 2005, **2**(Suppl 1):S57 doi:10.1186/1742-4690-2-S1-S57

It is increasingly clear that HIV transmission risk is very heterogeneous, and 43% of HIV transmission events have been ascribed to people with very early or acute HIV infection (Wawer, JID, 2005). To detect asymptomatic subjects with acute HIV infection (before seroconversion) we developed a cross sectional detection strategy. We tested 109,000 samples over 9 months at public testing sites in North Carolina. We found 606 people with undiagnosed HIV infection, including 23 with acute HIV infection (HIV antibody negative, serum RNA positive); the majority of subjects were screened in STD clinics. The median blood HIV concentration was 209,000 copies/ml, more than 10 times higher than in subjects with established HIV infection. We conducted two similar studies in our STD Clinic in Lilongwe, Malawi. Between 1 and 2% of subjects had acute HIV infection and the median blood viral load was greater than 106 copies/ml. We also found very high concentrations of HIV in the genital tract secretions of these subjects, and in patients with untreated STDs. Viral diversification was observed in serial samples from subjects with acute HIV infection after 11 weeks. The viral load in genital tract decreased more rapidly and to a greater extent than in blood. These results suggest that successful HIV prevention will require increased focus on the most infectious subjects, and development of novel behavioral and biological intervention strategies. Study of HIV transmission pairs should facilitate for vaccine development.