Retrovirology

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Poster presentation

Effect of HIV on production of anti-viral factors by HIV-specific CD4+ T cells

Catarina Hioe*[1], Gurvinder Kaur[1], Sandra Cohen[1], Michael Tuen[1], Diana Virland[1], Sayed Abdelwahab[2] and Alfredo Garzino-Demo[2]

Address: [1]New York University and Vetran Affairs Medical Center, New York, New York, 10010, USA and [2]Institute of Human Virology, Baltimore, Maryland, 21201, USA

Email: Catarina Hioe* - catarina.hioe@med.nyu.edu

* Corresponding author

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Background

CD4+ T cells are critical for effective immune responses against HIV, but these cells are targeted by the virus. Here we evaluated the capacity of HIV-specific CD4+ T cells to produce IFN-y and -chemokines and how they were affected by HIV infection.

Materials and methods

HIV gp120-specific CD4+ T cell lines (PS01 and PS02) were generated from PBMCs of HIV+ patients. Intracellular staining and ELISA were used to detect IFN-y, -chemokines, and virus infection.

Results

The CD4+ T cells produced IFN-y and MIP-1a in response to gp120. Also detected were RANTES and MIP-1a, but not MDC (CCL22). The b-chemokines displayed potent inhibitory activities against R5-tropic HIV-1. After the cells were exposed to BX08 (an R5 subtype B HIV-1 primary isolate), the capacity of these cells to produce IFN-y and MIP-1a in response to gp120 was initially comparable with that of the unexposed control. But after 3–4 days of infection, the numbers of cells capable of producing IFN-y and MIP-1a decreased significantly, while the percentage of infected cells reached >80%.

Conclusion

HIV-specific CD4+ T cells are susceptible to HIV. HIV reduces the capacity of the cells to produce IFN-y and b-chemokines. On-going efforts to enhance HIV-specific CD4+ T cell resistance against the virus will be presented.