Retrovirology

Poster presentation

Characterization of Proviral HIV Latency in Different T Cell Subsets of Patients Undergoing HAART

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Background

In an HIV infected person, each body compartment harbors a distinct resident HIV. There is an increasing awareness that each T cell subset harbors a genetically distinct lineage of the virus.

Materials and methods

Peripheral blood was obtained from 5 HIV patients receiving HAART for 2–12 years. Three patients had 400<HIV RNA copies/ml with between 529 and 1,588 CD4 T cells/μl. Other two had 915 and 453,000 RNA copies/ml with 235 and 266 CD4 T cells/μl. Each T cell subset was sorted by FACSAria, washed and DNA was isolated. Proviral HIV env C2-V3 genes were PCR amplified, cloned and sequenced, and were phylogenetically analyzed by using MEGA (v.2.1).

Results

In each individual, different T cell subsets harbored genetically distinct lines of HIV. In most patients, CD45RO (memory) subset of CD4 T cells were positive for HIV proviral DNA. Only one patient was positive for proviral HIV in naïve CD4 T cells. Both naïve CD4 and CD8 T cells showed highly divergent proviral HIV sequences.

Conclusion

In patients receiving a long-term HAART, proviral HIV DNA in each T cell subset represented a distinct lineage of the virus. Even in patients with less than detectable levels of HIV in the plasma, proviral DNA showed the evidence of drug resistance to antiretrovirals.