Retrovirology

Poster presentation

P16-53. Distinct subsets of memory T lymphocytes from HIV-1-infected subjects secrete IFN-γ and IL-2 in response to novel CD4+ T-cell HIV-1 epitopes

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Background

Functional memory T lymphocytes are involved in the control of HIV replication. Recently, we have described 18 HLA-DR promiscuous epitopes from HIV-1 consensus B sequences. Some of them contain CD8 epitopes inserted.

Objective

To investigate the functionality of the subsets of memory T cells that respond to these peptides among PBMC from HIV+ patients.

Methods

PBMC from 35 HIV+ patients with CD4 count>250 cells/μL: 8 aviremics in ART (AV-ART), 8 viremics in ART (VI-ART) (VL = 2260–31000 copies/mL) and 9 viremics naïve of therapy (VI-NO ART) (VL = 17100–698000 copies/mL) and 7 healthy donors were stimulated with pooled HIV- or CMV-peptides. The cellular phenotype and cytokine production were evaluated by multiparameter flow cytometry.

Results

The phenotypic analysis showed a significant reduction of CD8+ T naive cells in VI-ART (P = 0.014) and VI-NO ART (P = 0.003) compared to healthy group. The functional analysis revealed that all HIV-infected patients of our study had CD4+ and CD8+ secreting IFN-γ and/or IL-2 in response to our pool of HIV-1 peptides. This recognition involved central memory (TCM, CCR7+CD45RA-), effector memory (TEM, CCR7-CD45RA-), and CD45RA+ effector memory (TEMRA, CCR7-CD45RA+). In the CD4+ compartment the VI-ART group showed the smallest frequency of functional memory in response to our HIV pooled peptides. This observation was more evident in respect to IL-2 producing cells.

Conclusion

Our results suggest a functional heterogeneity of T memory subsets in response to set HIV-1 peptides, which may constitute a new candidate to an anti-HIV vaccine.