



ORAL PRESENTATION

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Th1/Th17 gammadelta T cells are expanded in HIV-1 infected patients and respond to *Candida albicans*

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Background

Circulating Vdelta2 T lymphocytes are involved in the response to mycobacteria and certain viruses, while Vdelta1 T cells, resident in the mucosal tissues, participate in the immunity against intracellular microorganisms. Vdelta2 T cells recognize non-peptidic phosphorylated antigens expressed by mycobacteria, whereas Vdelta1 T cells interact with MHC-related molecules (MICA, MICB) and with receptors for the UL-16 protein produced by CMV-infected cells. Vdelta1 T cells release IFN-gamma upon challenge with MICA⁺ cells, while Vdelta2 T cells secrete this cytokine upon stimulation with phosphate antigens. We reported that in early HIV-1 infection Vdelta1 T lymphocytes, producing IFN-gamma, are increased in the peripheral blood. We addressed the question of whether this T cell subset can also be involved in the response to fungal infections.

Methods

Thirty untreated HIV-1-infected patients were studied, compared to ten healthy subjects. Patients were staged according to the Center for Disease Control criteria. Serum HIV-1 RNA was quantitated and CD4 count performed. Cytokine production was determined by intracytoplasmic immunofluorescence and ELISA. Proliferation of Vdelta1 and Vdelta2 T cells to *C. albicans*, PPD, CMV and *P. Carinii* was determined by flow cytometry after CFSE staining. Gene expression was evaluated by Q-RT-PCR.

Results

We show that: 1) a population of circulating Vdelta1 T lymphocyte producing both IFN-gamma and IL-17 is expanded in HIV-1 infected patients; 2) this population is capable of proliferating and enhancing cytokine production in response to *Candida albicans*, while Vdelta2 T cells respond to mycobacterial antigens; 3) IFN-gamma/IL-17 double producers express the RORC and the TXB21 transcription factors, the CCR7 homing receptor, the CD161 molecule involved in transendothelial migration, and the CCR4 and CCR6 chemokine receptors.

Discussion

In HIV-1 patients, gammadelta T cells not only produce Th1/Th17 cytokines, but express a number of homing and chemokine receptors, thus being equipped for recirculation through lymph nodes and peripheral tissues. This circulating memory gammadelta T cell subset might play an important role in the control of HIV-1 spreading and in the defence against opportunistic infections, possibly contributing to compensate the impairment of CD4⁺ T cells.

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