Poster Group 3 - From Immunodeficiency to Autoimmunity

1422 - Activation of human immunodeficiency virus-specific T cells by histamine and IL-2, preliminary results

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Introduction: Cytotoxic T lymphocytes (CTLs) play an essential role in the control of viral replication during human immunodeficiency virus (HIV) infection. We tested the hypothesis that HIV specific CTLs could be activated after histamine and IL-2 incubation and we measured elevation of perforin and IFN-gamma production of this cell population. We compared blood samples from 17 HIV-seronegative and 21 HIV-seropositive subjects.
Methods: We measured the perforin production by HIV specific CTLs using two HIV peptides (gp 120 and gag) and the IFN-gamma production by HIV specific CTLs using the same two HIV peptides by means of flow cytometry and ELISPOT assay.
Results: We found differences in HIV specific CTLs perforin and IFN-gamma production between HIVpositive and HIVnegative subjects. HIV specific CTLs production of perforin in HIV positive subjects was found in 7,37% CTLs after stimulation by HIVpeptides alone, in 10,6% CTLs after stimulation by peptides + histamine and in 12,58% CTLs after stimulation by peptides + IL2. For HIV negative subjects was average production of perforin after stimulation by HIV peptides in 6,93 % CTLs cells, in 7,09% CTLs cells after stimulation by HIV peptides and histamine and in 7,36% CTLs cells after stimulation by HIV peptides and IL-2. Average number of cells producing IFN-gamma in ELISPOTs for HIV positive subjects was 16 after stimulation by HIVpeptides alone, 23 after stimulation by peptides + histamine and 38 after stimulation by peptides + IL2. Production of IFN-gamma in ELISPOTs for HIV negative subjects after stimulation by HIV peptides, after stimulation by HIV peptides and histamine and after stimulation by HIV peptides and IL-2 was negative.
Conclusion: The HIV specific CTLs production of perforin and IFN-gamma was higher after stimulation by HIV peptides and histamine or IL-2 in HIV positive subjects compared to the production after stimulation by HIV peptides alone and this difference was statistically significant. The production of both perforin and IFN-gamma was higher in seropositive subjects in comparison to seronegative subjects and the observed differences were more pronounced in IFN-gamma production.