



Abstract

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Antiretroviral treatment and increasing of IFN-gamma production in HIV-peptides, histamine and IL-2 activated HIV-1 specific CD8+ T lymphocytes (HIV-CTLs)

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Background: HIV-1 specific cytotoxic CD8+ T lymphocytes (HIV-CTLs) play an important role in the control of HIV-replication. Histamine and/or IL-2 increase the production of IFN-gamma by the HIV-CTLs as we have approved. Hypothesis: higher production of IFN-gamma depends on current antiretroviral medication and its duration.

Methods: 55 HIV positive patients (21 women) were included and subdivided into 3 groups: 1. untreated, 2. treated until 3 years, and 3. over 3 years. In vitro production of IFN-gamma by the HIV-CTLs using two HIV-peptides (gp 120 and gag), histamine and/or IL-2 by means of ELISPOT assay was measured. Statistical analysis using median, mean values, standard deviation, T-test and correlations was performed.

Results: IFN-gamma production, following the histamine stimulation was higher in the group 2 and 3 of treated persons, compared to untreated ($p=0.002$, $p=0.044$ resp.). IFN-gamma production, following the IL-2 stimulation was higher only in the group 2, compared to untreated ($p=0.004$). IFN-gamma production, following the histamine and IL-2 stimulation was higher in the group 2 and 3, compared to untreated ($p=0.036$, $p=0.001$ resp.). The highest IFN-gamma production, following the cimetidine (histamine receptor-2, H2R-inhibitor) addition, was observed in the group 3 of patients treated for more than 3 years. This surprising results could be explained due to malfunction of H2R in people with advanced HIV-infection.

Conclusions: Higher IFN gamma production by the HIV-CTLs after stimulation by HIV-peptides, histamine and/or IL-2 was observed in patients, who were treated at the same time with antiretrovirals. Support: Health Ministry Grant IGA NR9032-3/2006, VZ MSM 0021620812 and 0021620819.

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