

Poster presentation

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PI6-06. Control of HIV-1 by HIV-1 Pol-specific CD8+ T cells in chronically HIV-1-infected Japanese cohort

H Murakoshi*¹, H Gatanaga², M Koyanagi¹, S Oka² and M Takiguchi¹

Address: ¹Divisions of Viral Immunology, Center for AIDS Research, Kumamoto University, Kumamoto, Japan and ²AIDS Clinical Center, International Medical Center of Japan, Tokyo, Japan

* Corresponding author

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Background

Previous comprehensive analysis of HIV-1-specific CTL responses in Caucasian and African cohorts demonstrated that the CTL responses to HIV-1 Gag protein were most dominant ones and they were associated with the control of HIV-1 replication. However, such analysis has not been reported in Asian cohort. In the present study, we performed the comprehensive analysis of the magnitudes and the breadths of the CD8+ T cell responses against the cocktails of 11-mer overlapping HIV-1 Nef, Gag, and Pol peptides in 117 chronically HIV-1-infected Japanese individuals who had not been treated with ART.

Methods

The CD8+ T cell responses to the peptides were evaluated by measuring IFN- γ -producing CD8+ T cells by using ELISPOT assay.

Results

Both total magnitudes of the CTL responses against Gag (AV \pm SD, 5,404 \pm 4,490 spots/106 cells/individual, $p < 0.0001$) and Pol (4,041 \pm 3,948, $p < 0.0001$) were significantly higher than that against Nef (1,930 \pm 2,765) peptides in the 117 Japanese donors. We found significant negative-association of the total magnitudes of the CD8+ T cell responses to Pol with viral load ($r = -0.237$, $p = 0.011$) and positive association of those with CD4 counts ($r = 0.226$, $p = 0.015$), but did not find any significant association of those to Nef or Gag with them. Furthermore, the breadths of the responses to Pol were also significantly associated negatively with viral load ($r = -0.188$,

$p = 0.007$) and positively with CD4 counts ($r = 0.286$, $p = 0.007$), but those to Nef and Gag did not.

Conclusion

These results suggest that the Pol-specific CTLs contribute to the control of HIV-1 infection in HIV-1-infected Japanese individuals.