



POSTER PRESENTATION

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Human leukocyte antigen class I supertypes and viral control in HIV-1 infected former plasma donors from China

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Background

The role of human leukocyte antigen (HLA) class I supertypes in controlling human immunodeficiency virus type 1 (HIV-1) infection in Chinese has not been established. The aim of this study is to examine the frequency of HLA-A and HLA-B alleles and supertypes of 222 HIV-1 infected former plasma donors in central China and to investigate their impact on HIV-1 viral control.

Methods

HLA-A and HLA-B alleles were genotyped with PCR-SSP and sequence-based typing assay to four-digit resolution. The HLA alleles were classified functionally to 4 HLA-A supertypes and 6 HLA-B supertypes according to their shared peptide binding properties. Plasma viral load was determined using the Roche Amplicor ultrasensitive assay which has a lower detection limit of 50 copies HIV-1 RNA per ml.

Results

HLA-A03 supertypes(A03s) and HLA-B62 supertypes (B62s) were associated with lower viral load ($P=0.0206$, $P=0.0483$), whereas HLA- A24 supertypes(A24s) appeared to have an association with higher viral load ($P=0.0483$). There was a highly significant correlation between the genotypic supertypes(GS) and viral load (Kendall's tau $b = 0.180$, $P=0.000$). The median viral load was lower among A*3001($P=0.0139$), A*1101($P=0.0096$), B*5101($P=0.0025$), B*3501($P=0.0091$) or B*4601($P=0.001$) carriers and higher in A*2301($P=0.0106$) carriers.

Conclusion

HLA-A03s and -B62s may be associated with favorable HIV-1 viral control, A24s associated with unfavorable viral control; HLA-B*4601 within B62s and HLA-A*2301 within A24s might contribute to the outcomes of HIV-1 viral control.

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