Retrovirology

Poster presentation

P18-03. Dendritic cell-based immune therapy against HIV-1

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from AIDS Vaccine 2009
Paris, France. 19–22 October 2009

Published: 22 October 2009

Retrovirology 2009, **6**(Suppl 3):P312 doi:10.1186/1742-4690-6-S3-P312

This abstract is available from: http://www.retrovirology.com/content/6/S3/P312

Background

HIV-1 infected patients on HAART were treated with mRNA electroporated autologous dendritic cells (DC) in a phase I/II clinical trial and the effect of active immune therapy on immune responses and viral sequence evolution was evaluated.

Methods

HIV patients (n = 17) were vaccinated with DC expressing Tat, Rev and Nef. After four vaccinations HAART treatment was interrupted. PBMC taken during and after vaccination were screened with Elispot, using either peptides or electroporated DC for restimulation.

For sequence analysis, HIV RNA was amplified by RT-PCR; sequence variation in vaccine and control genes was analyzed pre- and post-vaccination.

Results

In 12 out of 16 patients screened with both peptide and DC Elispot, increased post-vaccination responses to vaccine-antigens were found. In 12/17 patients a complete set of both pre-HAART and post-vaccination sequences was obtained. With one exception, variation in pre-HAART and post vaccination HIV sequences was limited. Viral sequences spanning specific HLA restricted epitopes showed evidence of viral evolution, but this was not a common phenomenon.

Conclusion

The immune therapy was well-tolerated and did not have adverse effects. Increased cellular immunity against the antigens could be demonstrated. The enhanced immunity resulted in higher sequence variability in vaccine genes than control genes, although the effects were limited. There was no significant correlation between the breadth and/or extent of the immune response and the rate of virus evolution.