Retrovirology

Poster presentation

P16-42. Characterisation of HIV-1 specific T-cell responses in exposed uninfected individuals from a London cohort

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Background

HIV-1 seronegative individuals exist who, despite repeated high-level exposure to HIV-1, fail to seroconvert. One explanation for this phenomenon is the existence of protective HIV-1 specific T-cell responses. In order to address this issue, we have established an MSM cohort at St Mary's STI clinic in London.

Methods

This cohort includes serodiscordant couples, consisting of one HIV positive and one exposed uninfected (EU) individual, and monogamous unexposed, uninfected (UU) couples. Strict criteria are used to enrol couples into these groups. The study is blinded and has been designed so that it has significant statistical power to detect whether there is a true difference in T cell responses between the EU and UU groups. Participants donate samples and answer a detailed sexual behaviour questionnaire (SBQ) during 4 visits, 3 months apart. PBMCs are isolated and used for ex vivo and highly-sensitvie cultured IFN-gamma ELISpot assays. In the cultured assay, antigen-specific T-cells populations are expanded and positive responses in EU and UU samples are further characterised to identify the individual peptide antigen recognised and whether responses are CD4 or CD8 restricted.

Results

Enrolment for this study ceased in April, 2009, and initial T cell and SBQ analyses of all visit 1 data will be presented in this poster. Partial analysis of visit 1 showed T-cell responses in EU participants in 62% (8/13) cases and in UU participants in 32% (7/22) cases. Full analyses will include overall response rates, as well as whether specific responses are maintained longitudinally. Within the EU group, T cell responses are also being correlated with the presence of STIs, partner's viral load, and risk/exposure index.

Conclusion

Initial analysis suggests a difference in the rate of HIV-1 specific T-cell responses in EU and UU individuals, although full statistical analysis is on going.

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