

Poster presentation

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P04-16. Orally exposed uninfected individuals have systemic anti-HIV response correlating with partner's viral load

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

Published: 22 October 2009

Retrovirology 2009, **6**(Suppl 3):P44 doi:10.1186/1742-4690-6-S3-P44

This abstract is available from: <http://www.retrovirology.com/content/6/S3/P44>

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Background

We have previously shown that this cohort of exposed uninfected individuals (EU) of men who have sex with men (MSM) display HIV-1 neutralizing capacity in their salivary IgA1 (AIDS 2009). To investigate whether oral HIV-1 exposure mounts also a systemic anti-HIV-1 response, we have here investigated consecutive samples of plasma (unfractionated and IgA1 purified) for neutralizing capacity, and whether the response correlates with exposure measured by viral load in the HIV-positive partners.

Methods

Plasma were collected from EU (n = 25) every 6 months during 2 years and from low-risk controls (n = 22). IgA1-purification was performed with jacaline. Neutralization was tested in a PBMC-based neutralization assay using three primary HIV-1 isolates. Self-reported questionnaires described routes of HIV-1-exposure, and clinical records determined viral load in HIV-positive partners.

Results

At study start, plasma samples from 7/25 EU could neutralize 2 of 3 tested HIV-1 isolates. None of the 22 low-risk controls could neutralize any HIV-1 isolate (p = 0.01). 6/7 EU retained their neutralization capacity during continuous exposure, although 3/6 EU only neutralized one of the three HIV-1 isolates at time of last sampling. Of importance, the neutralization capacity among EU correlated with a significantly higher viral load in the respective partners compared to partners of non-neutralizing EU. Purified IgA1 was shown to mediate neutralization in 6/7

samples whereas none of the IgA1-depleted plasma samples could neutralize HIV-1.

Conclusion

Orally exposed uninfected MSM can mount an anti-HIV-1 response in plasma, here shown to correlate with the viral load in the HIV-positive partner.