

Poster presentation

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P20-14. Co- and superinfection of partners in a cohort of couples previously infected by genotypically different viruses in Kigali

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Background

The goal of this study was to determine in cohabiting couples, in which the partners were infected with genotypically different HIV (i) whether co- and superinfection could be detected, (ii) their frequency.

Methods

Approximately 12.5% of seroconverting individuals in the RZHRG Kigali discordant couple cohorts acquire their virus from someone other than their partner. In this study, we report on an analysis of 22 previously HIV-1 discordant couples where the seronegative partner was infected by a virus that was genetically distinct from that in the chronically infected partner. Samples were collected from each person at 3 monthly intervals for at least 12 months following incident infection. We used novel gp41 and gag-based HMA assays to detect dual infections and confirm co- and superinfections.

Results

Two partners among the 44 were lost to follow-up before seroconversion. Through analysis of the gp41 region, we identified seven individuals (16.7%) exhibiting evidence of dual infection. Six of the seven were also classified as dual infections using gag and gp120 regions. Of the seven, one individual was co-infected, two chronically infected individuals were immediately superinfected by their acutely infected partner, and two others were superinfected late after the acute infection. Two seroconverters

were infected by their chronically infected partner late after acute infection. Moreover, in the gag region only, three additional individuals (7.14%) with dual infections were identified indicating that recombination might already have occurred in the gp41 region. All three were superinfected late after the seroconversion: two by their chronically infected partner and one by the new seroconverter.

Conclusion

In this prospective study of a cohort of HIV-infected cohabiting couples with epidemiologically divergent variants, superinfection appears to be a frequent event (23.8%) and in two cases there is evidence for transmission/superinfection during acute infection of the previously negative partner.