
Incidence of HIV Superinfection Following Primary Infection

To the Editor: Anecdotal reports have suggested that individuals with preexisting human immunodeficiency virus (HIV) infection may be at risk for superinfection by different strains of HIV.1,2 We investigated the incidence of superinfection 6 to 12 months after a first diagnosis of HIV infection.

Methods. We included all recently infected antiretroviral-naive participants (n=78) in the San Diego and Los Angeles Acute Infection and Early Disease Research Programs between December 1997 and June 2003 who had deferred antiretroviral treatment for at least the first 6 months after diagnosis. We retrospectively analyzed blood samples collected at the time of enrollment and then another sample 6 to 12 months later. Superinfection screening was performed on both sets of samples by population-based sequencing of pol from plasma HIV RNA using Virosel version 2.0 (Celera Diagnostics, Foster City, Calif.).

Superinfection was suspected when isolates from the same individual shared their most recent common ancestor during phylogenetic analysis with at least 1 other epidemiologically unrelated isolate.4 To distinguish these cases from coinfection, dye-primer sequencing of pol, length polymorphism analysis of env, and clonal sequencing of env (Figure) revealed no evidence of coinfection.2,3 We found no evidence of sample contamination or processing error by analyses of pol and env sequence and HLA antigen on additional samples (data not shown). Within 6 months of detecting the superinfecting strain, plasma viral loads increased (mean, 1.6 log10 copies/mL; range, 0.8-2.2) and CD4 cell counts decreased (mean decrease, 132 cells/µL; range, 150 to 347) in each of the 3 individuals. Furthermore, each was associated with a change in antiretroviral susceptibility. Two individuals, initially infected with drug-resistant HIV, were superinfected with a wild-type strain. The third was initially infected with a wild-type strain and was then superinfected with a drug-resistant strain.

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Individuals already infected with HIV should thus continue vigilant personal protection through safe-sex practices or clean needle use for injection drugs, even if their risk exposures are with other HIV-infected people.

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Access to Data: Dr Smith had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analyses.

Funding/Support: This work was supported by National Institutes of Health grants SK23AI055276, AI27670, AI38858, AI43638, AI43752, UCSD Centers for AIDS Research (AI36214), AI29164, and M01-RR00425, and the Research Center for AIDS and HIV Infection of the San Diego Veterans Affairs Healthcare System.

Role of the Sponsors: The organizations funding this study had no role in the design and conduct of the study; the collection, analysis, and interpretation of the data; or the preparation, review, or approval of the manuscript.


CORRECTIONS

Incorrect Dosages: In the Original Contribution entitled “Safety and Efficacy of Enoxaparin vs Unfractionated Heparin in Patients With Non–ST-Segment Elevation Acute Coronary Syndromes Who Receive Tirofiban and Aspirin: A Randomized Controlled Trial” published in the July 7, 2004, issue of JAMA (2004;292:55-64), there were 2 incorrect dosages on page 56. At the bottom of column 2, the sentence should read, “The dosing regimen for tirofiban in the A to Z trial was a hybrid between the previously proven ACS and percutaneous coronary intervention dosing regimens: a bolus of 10 µg/kg over 3 minutes, followed by a maintenance infusion of 0.1 µg/kg per minute for a suggested minimum of 48 hours (or a minimum of 12 hours after intervention) and a maximum of 120 hours.”

Funding Source Omitted: In the Original Contribution entitled “Association Between Youth-Focused Firearm Laws and Youth Suicides” published in the August 4, 2004, issue of JAMA (2004;292:594-601), a funding source was omitted. In addition to the sources cited, the study also received support from the David and Lucile Packard Foundation.