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HIV-1 viral subtype differences in the rate of CD4+ T-cell decline among HIV seroincident antiretroviral naive persons in Rakai district, Uganda.

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Abstract

BACKGROUND: Data on the effect of HIV-1 viral subtype on CD4 T-cell decline are limited.

METHODS: We assessed the rate of CD4 T-cell decline per year among 312 HIV seroincident persons infected with different HIV-1 subtypes. Rates of CD4 decline by HIV-1 subtype were determined by linear mixed effects models, using an unstructured convariance structure.

RESULTS: A total of 59.6% had D, 15.7% A, 18.9% recombinant viruses (R), and 5.8% multiple subtypes (M). For all subtypes combined, the overall rate of CD4 T-cell decline was -34.5 [95% confidence interval (CI), -47.1, -22.0] cells/ microL per yr, adjusted for age, sex, baseline CD4 counts, and viral load. Compared with subtype A, the adjusted rate of CD4 cell loss was -73.7/microL/yr (95% CI, -113.5, -33.8, $P < 0.001$) for subtype D, -43.2/microL/yr (95% CI, -90.2, 3.8, $P = 0.072$) for recombinants, and -63.9/microL/yr (95% CI, -132.3, 4.4, $P = 0.067$) for infection with multiple HIV subtypes. Square-root transformation of CD4 cell counts did not change the results.

CONCLUSIONS: Infection with subtype D is associated with significantly faster rates of CD4 T-cell loss than subtype A. This may explain the more rapid disease progression for subtype D compared with subtype A

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