Impact of small reductions in plasma HIV RNA levels on the risk of heterosexual transmission and disease progression.

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Abstract
OBJECTIVE: To estimate the impact of small changes in plasma levels of HIV-1 RNA on the risk of heterosexual transmission or disease progression to an AIDS-defining event or death.

DESIGN AND METHODS: We systematically reviewed the published literature for studies that evaluated small viral load changes among antiretroviral-therapy-naive, adult populations. We modeled relative risk estimates for viral transmission and disease progression according to 0.3, 0.5, and 1.0 log10 increments of HIV load.

RESULTS: We calculated that the likelihood of transmitting HIV by heterosexual contact increased, on average, by 20% and that the annual risk of progression to an AIDS-defining illness or related death increased by 25% with every 0.3 log10 increment in HIV RNA. A 0.5 log10 increment in HIV RNA was associated with 40% greater risk of heterosexual transmission and 44% increased risk of progression to AIDS or death. A 1.0 log10 increment in HIV RNA was associated with 100% greater risk of heterosexual transmission and 113% increased risk of progression to AIDS or death.

CONCLUSION: Antiretroviral therapy continues to be unavailable or not-yet-indicated for 72% of the world's HIV-infected persons. Mounting evidence that treatment of coinfections may reduce HIV viral load, even modestly, suggests the priority of improved adjunctive care for HIV-infected persons even without antiretroviral therapy, both to slow disease progression and to reduce infectiousness.