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# Early ART averts HIV-1 transmission to sexual partners

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Early treatment of human immunodeficiency virus type 1 (HIV-1) with antiretroviral therapy (ART) prevents transmission of the disease in sexual partners, according to the HIV Prevention Trials Network (HPTN) 052 study.

Previous observational studies involving serodiscordant couples have shown that ART in persons with HIV-1 infection lowers the risk of sexual transmission of the virus. The HPTN 052 trial was designed to “determine the effect of ART on the transmission of HIV-1 from infected person to their sexual partners,” according to researchers.

A total of 1,763 index participants were randomized to receive either early (n=886) or delayed (n=877) ART. In the early-ART group, participants started therapy at enrolment (CD4+ count, 350 to 550 cells/mm<sup>3</sup>). In the delayed-ART group, participants began therapy after 2 consecutive CD4+ counts

fell below 250 cells/mm<sup>3</sup> or if an illness indicative of the acquired immunodeficiency syndrome (ie, an AIDS-defining illness) developed.

In the interim analysis of data, investigators found that early ART was associated with a 96% lower risk of index-to-partner, genetically linked HIV-1 infections than was delayed ART. The trial continued to assess the durability of the effect of ART for the prevention of HIV-1 transmission.

The primary endpoint of the study was the diagnosis of genetically linked HIV-1 transmission in the previously HIV-1-negative partner in an intention-to-treat analysis. By the end of the study, index participants had 10,031 person-years of follow-up, while partners were followed for 8,059 person-years.

During the trial, researchers observed 78 HIV-1 infections among partners (annual incidence, 0.9%; 95% CI, 0.7 to 1.1). Viral-linkage

status was determined for 92% of the partner infections. Of these, 3 were linked in the early-ART group and 43 in the delayed-ART group (incidence, 0.5%; 0.4 to 0.7), while 16 were unlinked in the early-ART group and 12 in the delayed-ART group (incidence, 0.3%; 0.2 to 0.4). [N Engl J Med 2016;doi:10.1056/NEJMoa1600693]

Early initiation of ART was associated with a 93 percent reduced risk of linked partner infection, compared with delayed ART (hazard ratio, 0.07; 0.02 to 0.22). No linked infections were observed when HIV-1 infection was stably suppressed by ART in the index participant.

“Recent reports have shown that very early initiation of ART can preserve immune function and reduce complications of HIV-1 infection. In our study, the early initiation of ART also provided health benefits to the participants receiving treatment,” said researchers. 🌐

