

Annex 5A. Studies of TasP in Serodiscordant Couples

Supplemental material for: Holmes, C.B., T.B. Hallett, R.P. Walensky, T. Bärnighausen, Y. Pllay, and M.S. Cohen. 2017. "Effectiveness and Cost-Effectiveness of Treatment as Prevention for HIV." In *Disease Control Priorities* (third edition). Volume 6, *Major Infectious Diseases*. Edited by K.K. Holmes, S. Bertozzi, B.R. Bloom, and P. Jha. Washington, DC: World Bank.

Study	Study location	Number of couples	Study population	Conclusions
<i>Prospective cohorts</i>				
Bray and others 2012	Uganda	586	Serodiscordant heterosexual couples: group A, CD4 ≤ 250 starting ART; group B, CD4 > 250, not on ART	Transmission rate of persons on and not on ART: 0.91
Bunnell and others 2006	Uganda	926	HIV-positive adults enrolled in home-based ART program reporting on their partners	ART, prevention counseling, and partner VCT associated with reduced risk of HIV transmission during first six months of therapy
Del Romero and others 2010	Spain	424	Couples recruited through HIV-positive patients at an HIV/STI clinic	Low infectivity of HIV in heterosexuals taking effective ART
Donnell and others 2010	Botswana, Kenya, Rwanda, South Africa, Tanzania, Uganda, Zambia	3,381	HIV- and HSV-positive individuals and their HIV-negative partners	Provision of ART to HIV-infected patients could achieve population-level reductions in HIV transmission
Hernando and others 2009	Spain	339	HIV-positive patients and their partners attending an HIV/STI clinic	Couples-based safe sex counseling and ART could reduce but not eliminate sexual transmission of HIV
Melo and others 2008	Brazil	93	HIV clinic patients and their seronegative partners	Transmitters showed significantly higher median viral loads, suggesting that heterosexual transmission of HIV is more a function of viral load than gender of the index case

Reynolds and others 2011	Uganda	250	Serodiscordant couples offered free ART if eligible	HIV transmission may be reduced among HIV discordant couples after initiation of ART due to reductions in viral load and increased condom use
Rodger and others 2014	14 European countries	1,110	Heterosexual and MSM serodiscordant couples	Transmission rate of zero; upper limit 95% CI for transmission for condomless anal sex: 0.96 per 100 person-years (any); 1.97 per 100 person-years (receptive anal sex MSM). Study is ongoing
Sullivan and others 2009	Rwanda, Zambia	2,993	Serodiscordant couples initiated on ART if eligible	94% reduction in HIV transmission associated with ART
Lu and others 2010; Wang and others 2010	China	1,927	Former plasma donors and their seronegative spouses	Seroconversion rate of 1.71 per 100 person-years No difference in rate of seroconversion of couples with a spouse on ART (4.8%) and a spouse not on ART (3.2%)
<i>Retrospective cohorts</i>				
Castilla and others 2005	Spain	393	HIV clinic patients and their seronegative partners	Combined ART applied according to current guidelines has great potential for preventing HIV transmission to sexual partners
Jia and others 2012	China, national sample	38,862	Serodiscordant heterosexual couples	26% relative reduction in HIV transmission associated with ART
Musicco and others 1994	Italy	436	HIV-positive clinic and surveillance center clients and seronegative partners	ART in HIV-infected men reduces, but does not eliminate, heterosexual transmission of infection

Source: Adapted and expanded from Cohen and others 2013; Muessig and Cohen 2014.

Note: ART = antiretroviral therapy; MSM = men who have sex with men; STI = sexually transmitted infection; VCT = voluntary counseling and testing. HSV = herpes simplex virus; CI = confidence interval.

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