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Addition of Acyclovir does not affect Adherence to HAART in HIV-1/ HSV-2 Co-Infected Women

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To the Editor

Recently, there has been an increased interest in the role of Herpes suppressive therapy in reducing the HIV-1 viral load of HIV positive individuals co-infected with HSV. With a few notable exceptions, no studies have found that acyclovir affects HIV-1 transmission, although it does reduce plasma, genital, rectal and seminal HIV-1 RNA concentrations in HSV co-infected individuals [1-6]. The majority of these studies have focused solely on HIV positive patients who are not currently receiving highly active antiretroviral therapy (HAART). As such, there has been very few analysis of the relationship between HAART and acyclovir adherence in individuals participating in studies examining the effect of Herpes suppressive therapy on HIV-1 viral loads. In light of the high rate of HSV co-infection in HIV-infected individuals [7-9], a closer examination of drug adherence among individuals receiving both acyclovir and HAART is relevant to daily clinical practice.

We analyzed the adherence data from a randomized controlled pilot study examining the effect of acyclovir on genital tract HIV shedding among women on HAART. 60 HIV-1/ HSV-2 co-infected women on HAART were randomly assigned to receive acyclovir at 800 mg by mouth twice daily or no acyclovir. Visits were conducted once every 4 weeks for one year. Adherence to HAART and acyclovir in the past 3 days and within the last 2 weeks were assessed at every visit by a self-report questionnaire. Odds ratios (OR) and 95% CIs were estimated using generalized estimating equations and robust standard errors.

The mean age of study participants was 44 years (range 23 to 59); 38% were Black, 35% White and 18% Hispanic. Mean CD4 count at baseline was 545cells/mm³ (range 169 to 1877). At one or more follow-up visit, 30 out of 60 women (50%) reported non-adherence to HAART in the past 3 days and 35 (58%) women reported non-adherence at some time within the preceding 2 weeks. However, the number visit days with reported non-adherence was low: 58 of 613 (9%) in the past 3 days, and 106 of 612 (17%) in the past 2 weeks. There

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was no significant difference in the acyclovir arm versus the control arm for 3-day and 2-week adherence to HAART (OR=1.1, CI 0.5 to 2.2, $p=0.8$ and OR= 0.8, CI 0.4 to 1.9, $p=0.6$). In the acyclovir arm, adherence to HAART was positively associated with adherence to acyclovir during both time periods (OR=11.6, CI 3.5 to 38.9, $p<0.001$ and OR=16.9, 95% CI 6.5 to 43.7, $p<0.001$). Reported sub-optimal adherence to acyclovir and HAART was positively, though not significantly, associated with detectable HSV-2 and genital tract HIV-1, respectively.

Ouedraogo et al. [2] reported mean treatment compliance of 98.9% and 99% in the valacyclovir and placebo arms in a randomized, double blind, placebo controlled trial of HSV suppressive therapy in women taking HAART [2]. Here, we report similar results indicating that the addition of acyclovir does not affect HAART adherence in HIV-1/HSV-2 co-infected women. Instead, adherence to acyclovir was significantly associated with adherence to HAART, which suggests that when non-adherent, participants were more likely to miss both types of medications. Overall, the majority of participants reported non-adherence to medications at some point during the 12 month study, though usually not at multiple visits. These results underscore the importance of reinforcing medication adherence in all HIV-infected individuals. A limitation of this secondary analysis is the lack of a more in depth analysis of the reasons for adherence/nonadherence in order to help develop intervention strategies aimed at improving adherence.

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References

1. Vanpouille C, Lisco A, Margolis L. Acyclovir: a new use for an old drug. *Curr Opin Infect Dis*. 2009; 22:583–587. [PubMed: 19726982]
2. Ouedraogo A, Nagot N, Vergne L, Konate I, Weiss HA, et al. Impact of suppressive herpes therapy on genital HIV-1 RNA among women taking antiretroviral therapy: a randomized controlled trial. *AIDS*. 2006; 20:2305–2313. [PubMed: 17117016]
3. Zuckerman RA, Lucchetti A, Whittington WL, Sanchez J, Coombs RW, et al. Herpes Simplex Virus (HSV) suppression with Valacyclovir reduces rectal and blood plasma HIV-1 levels in HIV-1/HSV-2-seropositive men: a randomized, double-blind, placebo-controlled crossover trial. *J Infect Dis*. 2007; 196:1500–1508. [PubMed: 18008230]
4. Celum C, Wald A, Lingappa JR, Magaret AS, Wang RS, et al. Acyclovir and transmission of HIV-1 from persons infected with HIV-1 and HSV-2. *N Engl J Med*. 2010; 362:427–439. [PubMed: 20089951]
5. Tanton C, Weiss HA, Rusizoka M, Legoff J, Chagalucha J, et al. Long-term impact of Acyclovir suppressive therapy on genital and plasma HIV RNA in Tanzanian women: a randomized controlled trial. *J Infect Dis*. 2010; 201:1285–97. [PubMed: 20235836]
6. Delany S, Mlaba N, Clayton T, Akpomiemie G, Capovilla A, et al. Impact of aciclovir on genital and plasma HIV-1 RNA in HSV-2/HIV-1 co-infected women: a randomized placebo-controlled trial in South Africa. *AIDS*. 2009; 23:461–469. [PubMed: 19155993]
7. Weiss H. Epidemiology of Herpes Simplex virus type 2 infection in the developing world. *Herpes*. 2004; 1:24A–35A.
8. McQuillan GM, Kruszon-Moran D, Granade T, Feldman JW. Seroprevalence of Human Immunodeficiency Virus in the US Household Population Aged 18-49 Years: The National Health and Nutrition Examination Surveys, 1999-2006. *J Acquir Immune Defic Syndr*. 2010; 53:117–123.

9. Stover CT, Smith DK, Schmid DS, Pellett PE, Stewart JA, et al. Prevalence of and risk factors for viral infections among Human Immunodeficiency Virus (HIV)-infected and high-risk HIV-uninfected women. *J Infect Dis.* 2003; 187:1388–1396. [PubMed: 12717619]