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Partner reports of patients' HIV treatment adherence

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To the Editor

Decades of clinical research have documented the positive impact of supportive social interactions on health promotion and health outcomes.[1, 2] This is particularly relevant in the context of HIV prevention and care, in which the social environment is characterized by stigma, shame, and homophobia, and where persons living with HIV have higher likelihood of substance abuse, depression, and anxiety. These forces threaten successful management of HIV disease, which often depends on timely initiation of and careful adherence to antiretroviral therapy (ART). Given the social context of HIV disease management, the role of spouses and partners in supporting HIV treatment adherence is gaining interest in clinical research and practice. High rates of ART adherence are critical to optimize clinical outcomes, but how to measure adherence is a resilient debate in HIV research and practice.[3] The most common approach employs self-reports of adherence, and several such measures have demonstrated evidence of reliability and validity when compared to criteria such as electronic medication monitoring and HIV viral load. However, there is no doubt that self-reported adherence data are eroded by bias, including social desirability and memory effects that contribute to inflated estimates of adherence. The current analyses were conducted to determine whether partners' reports of patients' adherence are a better gauge of medication adherence than self-report by the patient.

Methods

A convenience sample of 91 serodiscordant and 119 seroconcordant HIV positive male couples (N=420 men) were interviewed using computer assisted self interviewing technology immediately prior to blood draws for HIV RNA viral load assays. The viral load test was performed using the COBAS® AmpliPrep/COBAS® TaqMan® HIV test kit (Roche Molecular Systems, Inc.), which has a threshold for undetectability = < 48 copies/mL. All procedures were reviewed and approved by the Institutional Review Board, and written informed consent was obtained from each participant. Patients and their partners were interviewed simultaneously but separately to preclude interaction during the data collection process. Using a validated visual analog scale (VAS)[4], patients were asked "of the amount that you were supposed to take, how much of your HIV meds did you actually take in the past 30 days?" Partners were asked "of the amount that your partner was supposed to take, how much of his HIV meds did he actually take in the past 30 days?" Responses were marked on a line anchored by 0% and 100%. The association between percent adherence on

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the VAS and the patient's viral load (transformed log10) was calculated for the patient's self-report and separately for the partner's report of the patient's adherence. Viral load data and self-reports of adherence were available for 284 men (of the 420 men, 91 were HIV-negative, 34 were HIV-positive but not on ART, and11 respondents' viral load data were not available). A regression analysis regressed log10 viral load onto the patient's and partner's partners self-reports of the patient's adherence, controlling for length of relationship. Due to zero-inflation of the viral load outcome a hurdle regression analysis was performed using Stata 11 with robust standard errors computed by clustering on couple ID. The hurdle analysis computes the odds of log10 viral load equaling zero using a logistic regression component and a truncated linear regression component for cases with nonzero log10 viral load values.

Results

The mean age of the sample was 45.4 years (SD 10.3), and 17% were African American, 18% Hispanic, with 91% identifying as homosexual. Thirty-one percent of respondents reported high school education or less, and 54% reported annual incomes of less than US $20,000. On average, the couples had been in their current relationships for 7 years. The HIV+ men had known their HIV status for an average of 12.75 years, the mean CD4 count was 492, and those who were taking ART had been doing so for an average of 9.75 years. On average, the men reported being on 2.5 medications (range 1-5), and reported a mean number of pills per day of 4.0 (range 1-18). Of the 284 observations with laboratory data available for analysis, 222 (78%) had virologic suppression as evidenced by an undetectable viral load.

Both the patient's and the partner's report of the patient's adherence were significantly associated with viral load, but in different ways. For every one percentage point increase in the patient's self-reported adherence, the odds of the patient having an undetectable viral load was 1.04 (95% CI = 1.001, 1.07; p = .029) and the partner's report of the patient's adherence was significantly associated with the odds of the patient's viral load being undetectable (OR = 1.03; 95% CI = 1.0003, 1.06; p = .048). For every one percentage point increase in the patient's self-reported adherence, the mean viral load increased by .49%, a non-significant effect (B = .002; 95% CI = -.007, .01; p = .63). However, for every one percent higher report of the patient's adherence by his partner, there was a statistically significant corresponding 5.29% lower viral load for the patient (B = -.02; 95% CI = -.04, -.01; p = .005). Patient and partner adherence reports were only mildly correlated (*r* = .32), indicating that each uniquely contributed to explaining log10 viral load.

Comment

The pattern of results suggests that partners' estimates of the patients' medication adherence are a complementary and potentially superior indicator of viral suppression than the patients' own self-report. These findings, although limited to cross-sectional data with same-sex male couples, suggest that inquiry directed to patients' partners about ART adherence may provide additional information to relying solely on patients' self-reports, especially for patients in which viral load is not fully suppressed. Although not discernable from the current data, other formats of asking about partners' reports of patients' adherence (e.g., phone, email) may be of value and should be investigated. Clinical encounters that explore the spouse or partners' perceptions of adherence may help to better identify and address problems with ART treatment. Next steps in this line of research include investigating whether this finding holds true over time, with heterosexual couples, and with couples in other settings and across cultures.

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