Poster Board # 943
Abstract # 1654
21st Conference on Retroviruses and Opportunistic Infections
March 2- 6, 2013
Boston, MA, USA

Controlled Trial of an Internet-based Risk Reduction Intervention in HIV+ Men who have Sex with Men

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Background

- Technology based prevention methods in HIV-infected men who have sex with men (MSM) lack rigorous controlled trials but represent a prevention tool that can be highly accessible.

Objective

- To pilot an internet-based safer sex intervention to reduce sexually transmitted infections (STIs) and risky HIV transmission sexual activity among HIV-infected MSM.

Methods

- Eligible subjects were HIV-infected MSM who reported HIV negative/unknown partner and/or more than 2 partners or STI in prior year.
- Participants were randomized (1:1) to either a monthly behavioral risk survey instrument alone or with tailored internet-based prevention messages.
- Messages for the intervention arm targeted condom use, antiretroviral (ARV) use, disclosure of HIV status, and reducing substance use.
- STIs were assessed at baseline and every three months: syphilis and gonorrhea and chlamydia (urine, anal and pharyngeal).
- Primary endpoint: composite of any new STI event over 12 month study period analyzed with a modified intention-to-treat (mITT) population (randomized subjects who completed a baseline visit).

Results

Baseline Characteristics and Follow-up

- There were 181 MSM randomized. 179 completed baseline (table 1).
- Baseline characteristics were similar although intervention had higher rates of any unprotected anal/ vaginal sex (UAS) and lower disclosure of status (p=0.32 and p=0.02). The control group reported more STIs in the past month.
- Attrition in the intervention (19%) and control (25%) groups was similar (p=0.37).
- Median time on study: 358 days in both the intervention and in control (p=0.76).

Primary Outcome:

- STI occurrence on study was not different between groups (Table 2), p=0.50.
- Multivariable logistic regression showed no significant difference in new STIs adjusting for baseline STI status, ARV use and methamphetamine use comparing intervention to control (OR=1.35, 95% CI: 0.68-2.70, p=0.38).

Secondary Outcomes:

- UAS was not different between arms (0.33).
- UAS (Fig. 1A) declined in 10/12 study months of the Intervention arm (p<0.05) and in 3 months of control (month 9, 10, 12; p<0.05). In the intervention arm disclosure increased in all study months (p<0.05). Disclosure was higher in the intervention arm (vs. control) at months 4,5 and 6 (all p's<0.05).
- Time to intention to start or start of ART (Fig. 1C) in ART-naïve was faster in intervention (n=14) compared to control (n=15).

Fig.1A-C: Secondary Endpoints

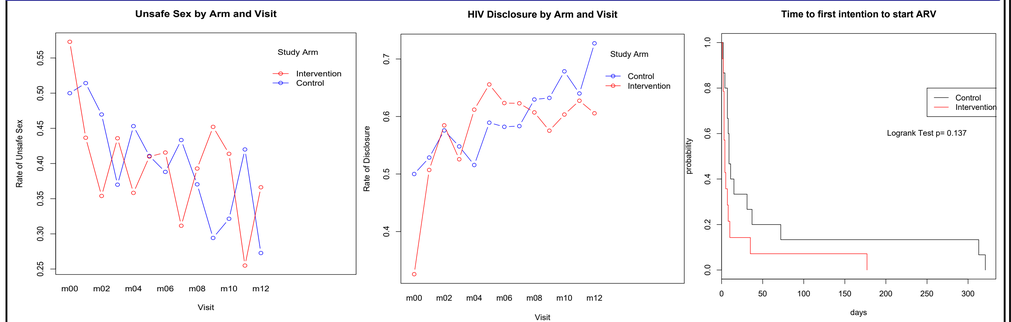


Fig. 1A: Any unprotected anal/vaginal sex with HIV-/unknown partner Fig. 1B: Any nondisclosure of status to HIV-/Unknown partner Fig. 1C: time to intention to start/start of ART in ART naive

Conclusions

- **The internet-based risk reduction intervention showed no evidence for efficacy in reducing incident STIs among HIV-infected MSM.**
- **Compared to baseline, self reported UAS declined and disclosure increased with HIV negative/unknown partners in both the study arms.**
- **These findings support further study of technology applications as interventions to reduce HIV transmission risk behaviors.**

Tables 1: Baseline Characteristics

Factors		Intervention	Control	P
		90	89	
Mean Age		44.6	42.7	0.14
Race/Ethnicity	White Black Hispanic Other	32 (36%) 28 (31%) 28 (31%) 2	27 (30%) 27 (30%) 29 (32%) 7	0.36
Primary Language	English	77 (86%)	77 (86%)	>0.99
Internet Use	>1 time/day daily weekly or less	43 (48%) 29 (32%) 18 (20%)	45 (51%) 23 (26%) 21 (23%)	0.84
Education	≤High school > High School	21 (23%) 69 (77%)	23 (25%) 66 (75%)	0.33
Monthly Income[1]	<$2000 ≥$2000	50 (78%) 14 (22%)	51 (76%) 16 (24%)	0.74
Mean CD4 count		559	531	0.36
VL below detection		60 (67%)	56 (63%)	0.64
AIDS Diagnosis		24 (27%)	21 (24%)	0.73
STI past 30 days[2]		4 (5%)	14 (15%)	0.01
On ART [2]		76 (84%)	74 (83%)	0.84
Mean Months on ART[3]		46.3	34.8	0.03
Baseline STI*		25 (28%)	27 (30%)	0.74
Unprotected anal/vaginal sex		51 (57%)	44 (50%)	0.37
Nondisclosure		60 (67%)	44 (50%)	0.02
Any drug use		32 (36%)	43 (48%)	0.10

[1]In those reporting income; [2]By self report; [3]In those on antiretroviral treatment; *As tested
VL=viral load; STI=sexually transmitted infection; ART=antiretroviral treatment
Table 1 N (%): number (percentage) of participants; HIV: human immunodeficiency virus, ART: antiretroviral therapy; STI; sexually transmitted infection (any site chlamydia, gonorrhea, syphilis); behaviors reported for past 30 days;: ANY unprotected anal/vaginal sex and NO disclosure with HIV-/unknown partner; drug use asked for included methamphetamine, club drug, cocaine, marijuana, other drugs

Table 2: Incident STIs

Incident STI		Intervention	Control	P
Subjects (N)		90	89	
New STI on study		27 (30%)	22 (25%)	0.50
Number of visits with new STI per subject	0	63 (70%)	67 (75%)	0.57
	1	19 (21%)	15 (17%)	
	2	6 (7%)	7 (8%)	
	3	2 (2%)	0 (0%)	

Acknowledgments

This work was supported by the the California HIV/AIDS Research Program RN07-SD-702, MC08-SD-700 and EI-11-SD-005; The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript