HPTN 078: High Prevalence of HCV Antibodies Among Men Who Have Sex With Men (MSM)

R. Irvin[1], T. Gamble[2], J. Malone[1], Z. Wang[3], E. Wilson[3], J. Hughes[4], J.E. Farley[1], K. Mayer[5], C. Del Rio[6], D.S. Batey[7], S.H. Eshleman[1], R.H. Remien[8], C. Beyrer[1], C. L. Thio[1] on behalf of the HPTN 078 Research Team

[1]Johns Hopkins University, Baltimore, MD, USA; [2]HPTN Leadership and Operations Center, FHI 360, Durham, NC, USA; [3]Statistical Center for HIV/AIDS Research and Prevention, Seattle, WA, USA; [4]University of Washington, Seattle, WA, USA; [5]Harvard Medical School, Boston, MA, USA; [6]Emory University School of Medicine, Atlanta, GA, USA; [7]The University of Alabama at Birmingham, Birmingham, AL, USA; [8]Columbia University, New York, NY, USA

INTRODUCTION AND OBJECTIVES

In the United States, approximately 2.7-3.9 million individuals have chronic hepatitis C virus (HCV) infection, and injection drug use remains the most common route of transmission.

Sexual transmission of HCV is uncommon, yet has been documented among MSM, primarily among those who are HIV-infected. Rectal mucosa trauma/bleeding, serosorting, decreased condom use, bacterial sexually transmitted infections, and HCV shedding in semen have been implicated in HCV transmission in HIV-infected MSM.

Recent phylogenetic analyses reveal that some HIV-uninfected MSM are infected with HCV strains circulating in HIV-infected MSM transmission networks.

Current HCV Guidelines recommend annual HCV testing for sexually active HIV-infected MSM. HCV testing is also recommended at pre-exposure prophylaxis (PrEP) initiation and at least annually while on PrEP in HIV-uninfected MSM.

OBJECTIVES

- To determine the prevalence of HCV antibodies among HIV-infected and HIV-uninfected MSM in HPTN 078
- To evaluate factors associated with HCV antibody positivity among MSM in HPTN 078

MATERIALS AND METHODS

HPTN 078 was designed to develop and assess the efficacy of an integrated case manager intervention strategy to identify, recruit, link to care, retain in care, and attain and maintain viral suppression among HIV-infected MSM in the United States. The study was developed in response to the sustained and even growing HIV epidemics among gay men and other MSM given complex interactions of individual, network level, and structural HIV risks. This study used deep-chain respondent driven sampling (DC-RDS) and direct recruitment to identify and recruit HIV-infected MSM who were not virally suppressed (≥1,000 copies/ml). The primary outcome of the HPTN 078 study was viral suppression 12 months after enrollment. A total of 1305 MSM were screened across four geographically diverse US cities (Atlanta, GA; Baltimore, MD; Birmingham, AL; Boston, MA). At screening, demographic, behavioral, and psychosocial questionnaires were completed, along with HIV, syphilis, and HCV antibody testing. This analysis assessed the prevalence of HCV antibodies and evaluated factors associated with HCV antibody positivity among the HPTN 078 cohort. Multivariable logistic regression was used to evaluate associations with HCV antibody positivity.

RESULTS

HCV Antibody Prevalence

- Of 1305 MSM, HCV antibody (Ab) results available for 1287 (99%)
  - 246 (19%) were positive
- HCV Ab positivity
  - High in HIV-infected (20%) and HIV-uninfected (16%) MSM (P=0.12)
  - Higher in those receiving substance use counseling/treatment (36%) than those that had not (15%)(P<0.0001).

Table 1. Univariate Analysis of Baseline Factors Associated with HCV Antibody Positivity

	Total N=1305 (%)	HCV Ab Positive N=246 (%)	HCV Ab Negative N=1041 (%)	P-value
Age Median (IQR)	41 (30, 52)	51 (42, 56)	38 (29, 50)	<0.0001
Race (Black)	898 (69)	158 (64)	728 (70)	0.21
Education (< High School Diploma)	192 (15)	56 (23)	134 (13)	<0.0001
DC-RDS	721 (55)	147 (60)	564 (54)	0.11
Employed	458 (35)	55 (22)	398 (38)	<0.0001
Insured (Public, Private)	1095 (84)	222 (90)	861 (83)	<0.01
Income (<$5,000/year)	347 (27)	64 (26)	280 (27)	0.79
Lifetime Male Sexual Partners (IQR)	17 (6, 50)	20 (7, 50)	16 (6, 50)	0.54
Receptive Anal Sex (No Condom) in 6 Months (IQR)	1 (0, 2)	1(0, 2)	1 (0, 2)	0.81
HIV-infected	902 (69)	182 (74)	718 (69)	0.12
Syphilis (Active)	279 (21)	50 (20)	226 (22)	0.28
Substance Use Counseling/Treatment	263 (20)	95 (39)	167 (16)	<0.0001
Unstable Housing	104 (8)	37 (15)	65 (6)	<0.0001

Table 2. Multivariable Analysis of Factors Associated with HCV Antibody Positivity*

	Odds Ratio	Odds Ratio 95% CI
Age (Continuous)	**1.06**	**1.05, 1.08**
Education (< High School Diploma)	**1.71**	**1.15, 2.55**
DC-RDS	1.00	0.71, 1.41
Employed	0.98	0.67, 1.44
Insured	1.00	0.58, 1.72
HIV-infected	1.00	0.67, 1.48
Substance Use Counseling/Treatment	**2.57**	**1.83, 3.61**
Unstable Housing	**2.16**	**1.29, 3.61**

*Adjusted by Site

CONCLUSIONS

- Nearly 1 in 5 MSM from the HPTN 078 cohort have been infected with HCV.
- After excluding MSM with potential injection drug use (substance use treatment as proxy), HCV antibody prevalence is higher than other cohorts.
- HIV was not associated with HCV antibody positivity. In HIV burden networks, high HCV infection prevalence may occur in HIV-uninfected MSM.
- HCV transmission risk could increase as PREP implementation expands and condom use declines among MSM.
- HCV education should target MSM with less than a high school diploma, MSM in substance use treatment, and MSM with unstable housing.

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