HPTN 078: High Incidence of Hepatitis C Virus Infections Among MSM

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BACKGROUND

In the United States, approximately 2.4 million individuals have chronic hepatitis C virus (HCV) infection. Sexual transmission of HCV is uncommon, yet has been documented among men who have sex with men (MSM), primarily among those who are HIV-infected. Annual HCV testing is recommended in HIV-infected MSM. While there is no HCV testing guideline for HIV-uninfected MSM, incident HCV infections have been noted. More data on incident HCV infection in MSM are needed.

METHODS

HPTN 078 assessed the efficacy of an integrated strategy to achieve viral suppression among HIV-infected MSM in the United States. HPTN 078 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 and behavioral questionnaires were completed, along with HIV and HCV testing.

In this sub-study, to identify subjects with recent HCV infection, HCV antibody (Ab) and RNA+ samples were tested using a modified Green Cross antibody avidity assay (Boon CROI 2019 #601). Incidence rate was calculated using the Assay-Based Incidence Estimation Model (Kassanjee R, et al. A new general biomarker-based incidence estimator. Epidemiology. 2012; 23(5): 721-728). Phylogenetic analysis was used to assess clustering. Univariable logistic regression was used to evaluate associations with recent HCV infection. This sub-study included 1041 HCV Ab- MSM and 96 HCV Ab+/HCV RNA+ MSM who were tested for recent infection. Of the 96, 16 had a recent infection (12 HIV+), so further analyses were restricted to these 16 plus the 1041 HCV Ab- MSM.

Main Findings

- The overall HCV incidence rate was 5.0/100 person-years (PYs) (95% confidence intervals [CI]: 2.0-8.0/100 PYs), with rates of 5.5/100 PYs (1.8-9.2/100 PYs) in HIV+ MSM and 4.0/100 PYs (0.0-8.5/100 PYs) in HIV-uninfected MSM (P=0.38)
- Although recent HCV infection was more common in HIV+ than in HIV-uninfected MSM, it was higher in both groups than in other studies

RESULTS

- The overall HCV incidence rate was 5.0/100 person-years (PYs) (95% confidence intervals [CI]: 2.0-8.0/100 PYs), with rates of 5.5/100 PYs (1.8-9.2/100 PYs) in HIV+ MSM and 4.0/100 PYs (0.0-8.5/100 PYs) in HIV-uninfected MSM (P=0.38)
- The median lifetime number of male sexual partners was 16 (interquartile range [IQR]: 6, 50) in HCV Ab- MSM and 100 (19, 150) in MSM with recent HCV (P<0.01)
- The proportion of men who had substance use counseling was significantly greater in those with recent HCV compared to those who were HCV Ab- (44% vs. 16%, P<0.01)
- Recent infections were mainly genotype 1; 3 genotype 3; none clustered together

Table 1. CHARACTERISTICS OF HCV ANTIBODY NEGATIVE AND RECENT HCV INFECTIONS IN MSM SCREENED FOR HPTN 078

Characteristic	Total N=1057	HCV Ab Negative N=1041	Recent HCV N=16	p-value
Age, years Median (IQR)	38 (29, 50)	38 (29, 50)	42 (29, 54)	0.60
Black Race (N,%)	744 (70.4)	734 (70.5)	10 (62.5)	0.49
Education (<High school diploma) (N,%)	137 (13.0)	134 (12.9)	3 (18.8)	0.49
DC-RDS (N,%)	570 (53.9)	564 (54.2)	6 (37.5)	0.18
Employed (N,%)	404 (38.2)	398 (38.2)	6 (37.5)	0.95
Insured (Public, Private) (N,%)	876 (82.9)	861 (82.7)	15 (93.8)	0.25
Income (<$5,000)(N,%)	284 (26.9)	280 (26.9)	4 (25)	0.41
Lifetime Male Sexual Partners (IQR)	16 (6, 50)	16 (6, 50)	100 (19, 150)	<0.01
Age at first time sex with a man, years Median (IQR)	17 (15, 20)	17 (15, 20)	17 (15, 20)	0.70
Exchange sex (N,%)	229 (21.7)	224 (21.5)	5 (31.3)	0.38
HIV-infected (N,%)	730 (69.1)	718 (69.0)	12 (75.0)	0.25
Syphilis (Active)(N,%)	230 (21.8)	226 (21.7)	4 (25)	0.46
Substance Use Counseling (N,%)	174 (16.5)	167 (16.0)	7 (43.8)	<0.01
Unstable Housing (N,%)	67 (6.3)	65 (6.2)	3 (18.8)	0.31
Unable to get healthcare when needed in the past 6 months (N,%)	120 (11.4)	117 (11.2)	2 (12.5)	0.45

CONCLUSIONS

- Although recent HCV infection was more common in HIV+ than in HIV-uninfected MSM, it was higher in both groups than in other studies
- This suggests that HCV risk counseling should be considered in both HIV+ and HIV-uninfected MSM, particularly in those with a high number of lifetime sexual partners and substance use
- Integrating HCV prevention into substance use counseling should be explored

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