Implementation of HCV treatments among people living with HIV/HCV in Washington, DC

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On behalf of the DC Cohort Executive Committee

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Background

- Despite the rise of direct-acting antivirals (DAA) as the standard of care for the treatment and cure of chronic hepatitis C virus (HCV), the implementation success of HCV treatment among persons with both HIV and HCV in clinical care has not yet been described.
- Identification of the barriers to HCV treatment is critical as untreated HCV has significant morbidity, especially among people living with HIV, and the potential for transmission of HCV; thus, it is imperative to identify the barriers to HCV treatment.
- Our objectives were to determine the rate of HCV treatment among people living with HIV/HCV, determine the rate of sustained virologic response (SVR) after initiation of HCV therapy, and to describe the factors associated with HCV treatment and SVR after initiation of HCV therapy.

Methods

Data Source

- DC Cohort is a longitudinal research project with approximately 12,000 participants living with HIV receiving medical care at 14 HIV clinic sites in Washington, District of Columbia (DC), USA.
- Inclusion criteria:
  - Age ≥3 years
  - Enrollment in the DC Cohort between January 1, 2011 and June 30, 2021
  - Detectable HCV RNA prior to June 30, 2021
- Exclusion criteria:
  - Receipt of HCV treatment prior to first available HCV RNA (n=47)

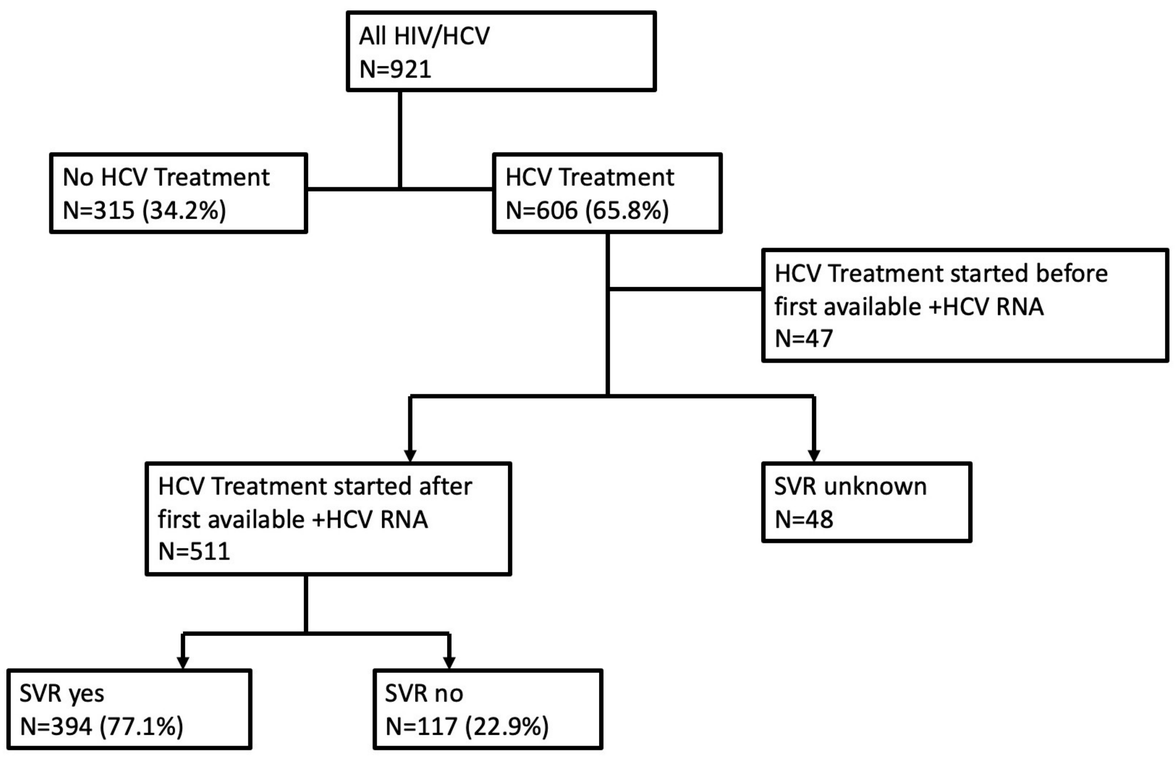
Definitions & Other Covariates:

- SVR was defined as an undetectable HCV RNA within 6 months of initiation of DAA therapy or 12 months of initiation of non-DAA therapy.
- Additional Covariates of Interest:
  - Race/ethnicity
  - Gender at enrollment (female, male, transgender: male-to-female)
  - Site of care (community- or hospital-based site)
  - Insurance status
  - Employment status
  - Housing status
  - State of residence (DC, Virginia, Maryland, other)
  - CD4 status (≥200 cells/μL vs <200 cells/μL)
  - HIV viral load suppression (HIV RNA <200 copies/mL)
  - Smoking
  - Alcohol abuse
  - Recreational drug use
  - Medical comorbidities (diabetes mellitus, hypertension, hyperlipidemia, & cancer)

Analysis Methods:

- We determined the prevalence of HCV therapy in the pre-DAA era (2011-2013) versus the post-DAA era (2014-2022).
- We utilized descriptive statistics to reveal cohort characteristics and identify those who received DAAs or other HCV treatments.
- Among those receiving HCV treatment, we determined the proportion who achieved SVR.
- Multivariable logistic regression was used to determine factors associated with HCV treatment or SVR by adjusting for covariates listed above.
- Significance tests were evaluated with alpha set at 0.05.

Figure 1. HCV treatment and SVR achievement among people living with HIV/HCV



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Results

- 919 people living with HIV/HCV with median age of 56.8 years (IQR 50.6-61.2) were identified from 11,774 consented participants ≥3 years of age.
- Only 20 participants were <30 years old.
- 75% (n=690) were male.
- 74% (n=678) had HIV viral load <200 copies/mL at the time of HCV diagnosis.
- 60% (n=548) reported current/former substance use and 42% (n=384) reported current/former alcohol abuse.
- Median time from HCV diagnosis to treatment was 6.95 months (IQR 1.48-25.10).
- Among the 66% (n=606/919) that received HCV treatment, 511 had available follow-up HCV RNA.
- 79% (n=481/606) received treatment in the post-DAA era (2014-2022).
- 92% of those treated with HCV therapy received DAA.
- 77% (n=394/511) achieved SVR.
- SVR was less likely if CD4 <200 cells/μL (aOR=0.47 (0.24-0.94), p=0.03).

Table 1. Factors associated with HCV treatment and SVR achievement among persons with HIV/HCV

	OR (95% CI)	P-value	aOR (95% CI)	P-value
HCV Treatment[1]				
Age per 10-year increase	1.24 (1.08-1.43)	**0.0017**	1.24 (1.05-1.46)	**0.0093**
Post-DAA (2014-2022) vs. Pre-DAA (2011-2013)	2.03 (1.49-2.75)	**<0.0001**	1.76 (1.23-2.51)	**0.0018**
HIV RNA <200 copies/mL vs. ≥200 copies/mL	2.51 (1.78-3.54)	**<0.0001**	2.52 (1.77-3.58)	**<0.0001**
CD4 <200 vs. CD4 ≥200	0.71 (0.45-1.12)	0.1368		
SVR Achievement[2]				
Post-DAA (2014-2022) vs. Pre-DAA (2011-2013)	1.18 (0.72-1.93)	0.5178		
HIV RNA <200 copies/mL vs. ≥200 copies/mL	0.93 (0.52-1.67)	0.8127		
CD4 <200 vs. CD4 ≥200	0.47 (0.24-0.93)	**0.0299**	0.47 (0.24-0.94)	**0.0333**

1: Multivariable model effects (aOR) were also adjusted for race/ethnicity. (n=848)
2: Multivariable model effects (aOR) were also adjusted for age at HCV, site of care (hospital v. community), race/ethnicity, any cancer diagnosis prior to HCV. (n=493)

Summary

- In the post-DAA era (2014-2022), persons living with HIV/HCV were more likely to have evidence of HCV treatment compared to pre-DAA era (2011-2013).
- Receipt of HCV treatment was associated with older age and HIV RNA suppression.
- Among those treated for HCV, SVR was inversely associated with CD4 <200 cells/μL.
- However, receipt of HCV treatment in the post-DAA era was not associated with achievement of SVR. This may not necessarily reflect poor efficacy of DAA therapy but rather the need for health systems to improve continual engagement in clinical care in order to help clients complete HCV treatment.

Limitations

- Due to the retrospective nature of this study, we were limited in our scope to investigate other factors that may influence the likelihood of HCV treatment and achievement of SVR because our data analysis was confined to the parameters of information collected by the DC Cohort.

Conclusions

- Despite the availability of highly effective, curative treatments for HCV, about one-third of people living with HIV/HCV did not receive HCV treatment.
- Surprisingly, social determinants of health such as race/ethnicity, gender, insurance status, housing status, alcohol abuse, and recreational drug use were not strongly linked to HCV treatment status or achievement of SVR in this cohort of persons living with HIV/HCV in DC.
- 23% of people who received HCV treatment did not achieve SVR despite the large majority receiving DAA, which likely reflects the challenges of medication adherence and keeping clients engaged in follow-up care.
- Lack of health insurance did not seem to be a barrier to accessing HCV treatment; 96.5% of persons included in this study had health insurance, whether public or private.
- In a future direction, it would be interesting to examine whether systemic barriers such as insurance denials or incomplete coverage of medication costs are major contributors to not getting HCV treatment.
- Increasing access to HCV treatment should be a public health priority because the available treatments are potentially curative, and therefore could have both life-saving and cost-saving implications for both the U.S. and global health systems.

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