Direct Acting Antiviral Initiation among People with HIV and HCV in North America: Factors Driving the Treatment Gap

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BACKGROUND

- People with HIV (PWH) are at increased risk of negative outcomes from coinfection with hepatitis C virus (HCV) and are a key group targeted for treatment with direct-acting antivirals (DAA).
- However, estimates suggest that a DAA initiation gap persists among PWH eligible for DAA treatment.
- We estimated DAA uptake among PWH with HCV coinfection in the NA-ACCORD to identify factors associated with DAA initiation.

METHODS

- **Study Population:** U.S. and Canadian PWH ≥18-years in one of 15 NA-ACCORD clinical cohorts capturing DAA treatment with at least one CD4 count or HIV care encounter during the study period (1/1/2014-12/31/2021).
- **HCV co-infection ascertainment**: a detectable HCV RNA. Clearance of HCV (spontaneous or prior treatment) was defined as having an undetectable HCV RNA after a prior detectable HCV RNA and were censored at the date of clearance.
- **Primary Outcome**: first prescription of any DAA.
- **Study entry:** the latest of the cohort open date, patient enrollment date, first detectable HCV viremia, initiation of ART, observation window open dates for covariates or 1/1/2014.
- **Study exit**: the earliest of DAA prescription (event), clearance of HCV viremia (ineligible for DAA), cohort close date, observation window close date, loss to follow-up, death or 12/31/2021.

Statistical Analysis

- We used the cumulative incidence function to estimate the cumulative incidence of DAA initiation accounting for both death and HCV clearance as competing risks.
- Cox proportional hazard models estimated crude and adjusted hazard ratios (aHR) and 95% confidence intervals to identify factors associated with DAA initiation including sex, age, time period of study entry, HIV risk group, race/ethnicity, HBV coinfection, alcohol use, smoking status, FIB-4 score, HIV RNA, CD4 count, total cholesterol, LDL, HDL, and a history of AIDS, hypertension, diabetes, and chronic kidney disease.
- All statistical analyses were conducted using SAS version 9.4 (SAS Institute Inc., Cary North Carolina) and R version 4.4.1.

Accounting for death and HCV viral clearance, the treatment gap of Direct Acting Antiviral initiation among people with HIV and HCV coinfection that are eligible for treatment* has narrowed over time, however disparities in uptake persist in specific populations.

those without an HCV RNA measurement were excluded

RESULTS: THE DAA TREATMENT GAP

- Among 6,300 PWH with documented HCV viremia (14,050 person-years), 3,672 (58%) were observed to initiate DAA over the study period.
- Accounting for the competing risks of death and HCV clearance, the treatment gap between those eligible for DAA initiation and those who initiated DAA significantly narrowed over time from 77% at 1-year of study follow-up to 6% at 8-years (**Figure**).
- At 8-years of follow-up, 13% of the study population had achieved HCV viral clearance without observed DAA initiation indicating either spontaneous HCV clearance or unobserved treatment and 15% had died.
- We excluded 369 PWH with no HCV RNA measurement which we used to identify eligibility for DAA. However, this may underestimate the DAA initiation gap as not having an HCV RNA test would represent an upstream failure in the treatment cascade.

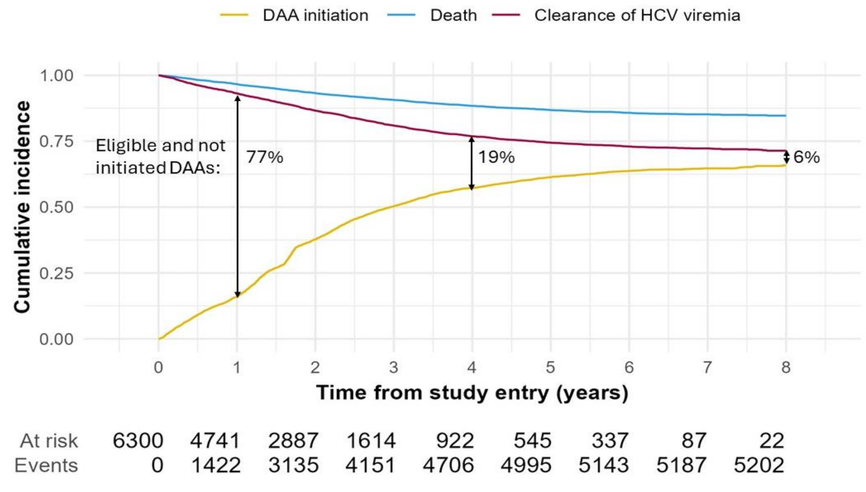


Figure. The cumulative incidence of DAA initiation (outcome), death and spontaneous HCV clearance (competing risks), 2014-2021, NA-ACCORD

RESULTS: FACTORS ASSOCIATED WITH DAA INITIATION

- PWH reporting heterosexual (aHR=0.81 [0.70, 0.94]) or injection drug use (aHR=0.83 [0.74, 0.93] HIV risks initiated DAA at a lower rate compared with men who have sex with men.
- A reduced rate of DAA initiation was identified among non-Hispanic Black (aHR=0.82 [0.76, 0.89]) and Hispanic (aHR=0.86 [0.75, 0.98]) PWH compared with non-Hispanic white PWH.
- DAA initiation was significantly lower among PWH with at-risk alcohol use (aHR=0.92 [0.86, 0.99]), smoking (aHR=0.76 [0.69, 0.84]), detectable HIV viremia (aHR=0.60 [0.54, 0.66]), and a history of AIDS (aHR=0.91 [0.84, 0.99]).
- A higher FIB-4 score (>3.25 vs. <1.45) was associated with increased DAA initiation (aHR=1.22 [1.10, 1.36]).

CONCLUSIONS

- Accounting for death and HCV clearance the treatment gap among PWH eligible for, and those initiating, DAA has narrowed over time.
- We identified factors associated with disparities in DAA uptake including HIV risk, race/ethnicity, smoking, alcohol use and HIV viremia.
- Targeted approaches are needed to increase equity in DAA initiation by addressing these disparities to achieve the goal of HCV elimination among PWH.

ADDITIONAL INFORMATION

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