HCV Re-infection After DAA Treatment Among People Living with HIV in San Diego

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BACKGROUND

- The impact of hepatitis C (HCV) re-infection in people living with HIV (PLWH) who have been cured with direct acting antivirals (DAA) is important to better understand the impact HCV reinfection may have on HCV eradication in this patient population.

We previously reported the HCV re-infection rate in San Diego from 2000 to 2014 among HIV-infected men who have sex with men (MSM) during the interferon era was 2.89/100 person-years of follow up (PYFU). We aim to report the HCV reinfection rate among all at risk groups of PLWH who were treated with DAA at an academic medical center-based HIV clinic in San Diego, CA.

METHODS

- Retrospective cohort analysis of adult PLWH who initiated HCV treatment with DAAs at the University of California, San Diego between 2014 and July 2019
- We included PLWH with documented sustained virologic response (SVR) and at least one subsequent HCV RNA measurement before February 2020
- HCV re-infection was defined as 1) A new detectable HCV viral load after documented SVR, or 2) HCV viremia between end of treatment and SVR with a documented change in HCV genotype
- Follow up time was calculated from the date of SVR documentation until the first subsequent positive HCV RNA or the last negative HCV RNA
- As part of our standard-of-care treatment protocol we collected serial testing for sexually transmitted infections and urine drug screens before and after SVR as surrogate markers of ongoing HCV risk behavior

Despite ongoing drug use and high-risk sexual behaviors after achieving SVR12, five years after the introduction of DAA the HCV re-infection rate among PLWH remains low in San Diego (2.44 per 100 PFYU), which is comparable to the one we reported in the interferon era.

RESULTS

- Median number of HCV RNA tests since SVR was 2.0 (range 1-7)
- Eight re-infections occurred over 328.1 person years of follow up (PYFU)
- Median time from SVR12 to reinfection was 51 weeks (range 0-88.7 weeks)

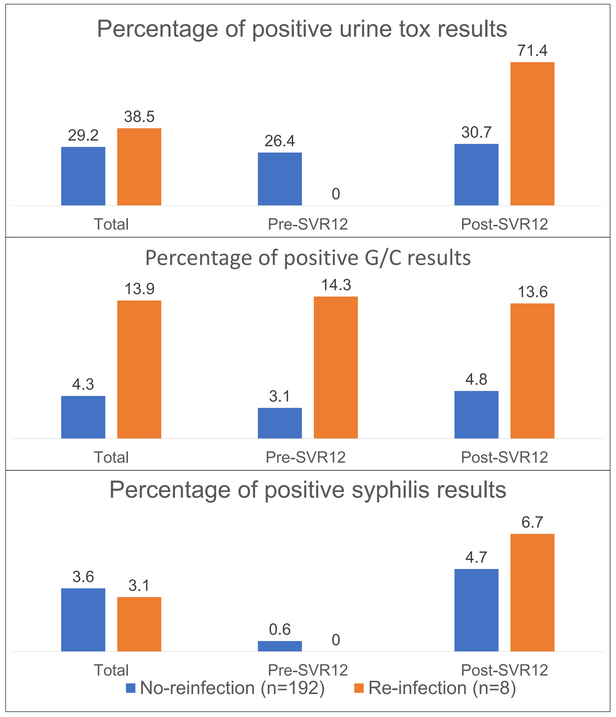
Table 1: Baseline characteristics (n=200)

Median Age (range)	52 (20-72)
Sex (%)	
Female	30 (15)
Male	170 (85)
Gender (%)	
Cisgender Female	30 (15)
Cisgender Male	168 (84)
Transgender Female	2 (1)
Race/Ethnicity (%)	
White	153 (76.5)
Non-white	47 (23.5)
HIV/HCV Risk factor (%)	
MSM only	72 (36)
MSM+IVDU	40 (20)
IVDU only	78 (39)
Heterosexual only	5 (2.5)
Other/Unknown	5 (2.5)
HCV Genotype (%)	
1/1a	139 (69.5)
1b	19 (9.5)
2	9 (4.5)
3	24 (12)
4	8 (4)
Other	1 (0.5)
Median CD4 count (range)	503 (26-2010)
HIV VL <50 cpm (%)	184 (92)

cpm=copies/mL, MSM=mem who have sex with men, IVDU=intravenous drug use

Table 2: HCV Re-infection rates

	Reinfection rate (per 100 PYFU) (95% CI)	PYFU
HIV/HCV Risk factor (n)		
All (200)	2.44 (1.05-4.80)	328.10
MSM only (72)	4.36 (1.42-10.17)	114.76
MSM+IVDU (40)	4.63 (0.56-16.74)	43.17
IVDU only (78)	0.64 (0.02-3.59)	155.33
Heterosexual only (5)	0.00	5.78
Other/Unknown (5)	0.00	9.07
Gender (n)		
Cisgender Female (30)	0.00	46.46
Cisgender Male (168)	2.50 (1.01-5.16)	279.73
Transgender Female (2)	52.36 (1.33-291.71)	1.91
Race/Ethnicity (n)		
White (153)	2.41 (0.88-5.24)	249.25
Non-white (47)	2.54 (0.31-9.16)	78.85
Age (n)		
<30 (10)	0.00	13.53
30-39 (24)	6.80 (0.82-24.55)	29.43
40-49 (41)	1.52 (0.04-8.47)	65.81
50-59 (88)	2.50 (0.68-6.39)	160.18
>59 (37)	1.69 (0.04-9.42)	59.16



CONCLUSIONS

- The overall HCV re-infection rate was low but varied based on HCV-risk factor, gender, and age.
- HCV re-infection was highest among those with MSM and MSM+IVDU risk factors
- There were no observed HCV re-infections in cisgender female patients
- Patients who were re-infected had a higher proportion of positive urine toxicology and gonorrhea/chlamydia results
- These results may help guide future interventions to prevent HCV re-infection among PLWH in San Diego

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