Open Forum Infectious Diseases

BRIEF REPORT

Feasibility of Treating Hepatitis C in a Transient Jail Population

Ross MacDonald,[1] Matthew J. Akiyama,[1,2] Aimee Kopolow,[1] Zachary Rosner,[1] Wendy McGahee,[1] Rodrigue Joseph,[1] Mohamed Jaffer,[1] and Homer Venters[1]

[1]Correctional Health Services, New York City Health + Hospitals, Bronx; and [2]Montefiore Medical Center/Albert Einstein College of Medicine, Bronx, New York

Jails represent a critical component of the public health response to HCV elimination. We report on outcomes of 104 patients receiving HCV treatment from January 1, 2014 to June 30, 2016 in a large urban jail setting. Our data demonstrate that treatment in jails is feasible, but many barriers remain.

Keywords. DAA; HCV; jail; NYC corrections.

Novel direct-acting antivirals (DAAs) have shown efficacy as well as cost effectiveness [1, 2] in curing hepatitis C virus (HCV) among incarcerated populations. Prisons have been identified as key sites for treatment of HCV due to high prevalence of the disease among prisoners and long sentences [3]. The role of jails is less clear due to the short and unpredictable lengths of stay of the detainees held there. With an estimated 11.7 million jail admissions annually [4], HCV treatment in jails represents a key public health opportunity, but the feasibility of treatment initiation in this transient population has yet to be established.

Jails may also threaten community treatment efforts. Many patients started on HCV treatment in the community will pass through jail during the course of their treatment. If jails do not have the resources or systems in place to continue HCV therapy, treatment regimens will fail and societal payers will suffer losses on investments. Even with such systems in place, arrest results in an interruption in treatment, which could last for several days, with unknown effects on treatment outcomes and the possibility of viral resistance.

NYC Health + Hospitals' Correctional Health Services (CHS) is responsible for medical care for patients incarcerated in the New York City (NYC) jail system and both continues and initiates DAAs in the jail setting. Correctional Health Services physicians evaluate patients for initiation and potential treatment starts, which are centrally approved based on estimated length of stay and/or clinical urgency of treatment. For newly incarcerated patients, all clinical and pharmacy staff have been instructed to order and dispense DAAs immediately at the point of intake for patients who report active therapy or are identified to be on DAAs in the community by electronic health information exchange (HIE). Treatment for HCV is administered through nurse directly observed therapy. In this study, we characterize patterns of treatment and outcomes for the first cohort of patients receiving treatment with any DAA agent for HCV in the NYC jail system.

METHODS

We used pharmacy reports to identify all patients who were treated with DAAs who received their first dose of HCV therapy in jail after January 1, 2014 and received their last dose in jail before June 30, 2016. Regimens included sofosbuvir/ribavirin, sofosbuvir/simeprevir, sofosbuvir/ledipasvir, ombitasvir/paritaprevir/ritonavir/dasabuvir ± ribavirin, sofosbuvir/daclatasvir, and elbasvir/grazoprevir. Clinical characteristics and outcomes were collected by a structured chart review. Patients were characterized as (1) community-initiated if they reported they were on treatment at the time of jail intake, and medication was continued by the jail health service and (2) as jail-initiated if the medication was started de novo by CHS physicians. Due to short jail stays, viral loads (VLs) were not available for all patients 12 weeks after treatment completion, which is the standard definition for sustained virologic response (SVR). Therefore, we report on any VL obtained posttreatment (Table 1). Loss to follow up was defined as the absence of any posttreatment VL available to CHS. In some cases, subsequent reincarceration provided opportunity for follow-up VLs in the course of routine clinical care, and each case was reviewed for such VLs through August 31, 2016. We used descriptive statistics to characterize the outcomes for treated patients. This analysis represents program evaluation and does not constitute human subjects research.

RESULTS

Overview

Of 104 patients receiving HCV treatment during 30 months, 62 (60%) entered the jail on treatment and 42 (40%) were initiated in jail. Forty-seven (45%) patients had comorbid human immunodeficiency virus (HIV). Viral loads at the end of treatment or later were available for 74 patients (71%) and were undetectable in 71 (96%) of those. Thirty patients (29%) were lost to follow

Received 2 May 2017; editorial decision 28 June 2017; accepted 5 July 2017.

Correspondence: M. Akiyama, MD, MSc, 3300 Kossuth Ave., Bronx, New York 10467 (makiyama@montefiore.org).

Open Forum Infectious Diseases®

© The Author 2017. Published by Oxford University Press on behalf of Infectious Diseases Society of America. This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs licence (http://creativecommons.org/licenses/by-nc-nd/4.0/), which permits non-commercial reproduction and distribution of the work, in any medium, provided the original work is not altered or transformed in any way, and that the work is properly cited. For commercial re-use, please contact journals.permissions@oup.com.

DOI: 10.1093/ofid/ofx142

Downloaded from https://academic.oup.com/ofid/article/4/3/ofx142/3932987 by guest on 17 April 2024

Table 1. Treatment Outcomes by Initiation Site

	Total n (%)	Completed Treatment While Incarcerated n (%)	Posttreatment VL Available n (%)	VL Undetectable n (%)
Jail initiated	42 (40%)	36 (86%)	39 (93%)	38 (97%)
Community initiated	62 (60%)	28 (45%)	35 (57%)	33 (94%)
Total	104 (100%)	64 (62%)	74 (71%)	71 (96%)

Abbreviation: VL, viral load.

up, 3 (10%) of whom were initiated in the jail setting and 27 (90%) of whom were patients who entered jail on treatment.

Community-Initiated Patients

Between January 1, 2014 and June 30, 2016, 62 patients were incarcerated while on community-initiated HCV regimens and continued on therapy in the NYC jail system. In most cases, medication was started within 1 day of jail admission (median 1 day, range 0–10 days). The median duration of jail-based treatment for community-initiated patients was 15 days (mean, 24.6 days), and 34 patients (55%) were discharged before completing treatment. Thirty-four (55%) community-initiated patients were coinfected with HIV. Viral loads at the end of treatment or later were available for 35 patients (57%), and 33 (94%) of those were undetectable. Twenty-seven patients (44%) were lost to follow up, and 13 (48%) of these had dedicated visits discussing return to their community treatment provider upon release (linkage to care). Two patients had detectable VLs after treatment. Both were discharged before treatment completion with lengths of stay of less than 1 week, and VLs were found to be detectable on subsequent incarcerations.

Jail-Initiated Patients

Forty-two patients were initiated on HCV treatment in jail. Treatment initiation occurred at a median of 146 days after incarceration (range, 37–1262). The median duration of jail-based treatment was 84 days (range, 24–170). Thirteen (31%) of the 42 patients were coinfected with HIV. HCV VLs at end of treatment or later were available for 39 (93%) patients, and 38 (97%) of these were undetectable. Three patients (7%) were lost to follow up, and, of these, 1 completed treatment while in jail but was discharged before follow-up testing. Thirty-six (86%) of the 42 patients initiated on therapy completed treatment while incarcerated, with a further 3 (7%) discharged within 14 days before treatment completion. Discharge medication was arranged for these 3 patients. Three patients (7%) were discharged more than 14 days before treatment completion, 1 of whom later had an undetectable posttreatment VL, and 2 were lost to follow up.

DISCUSSION

More than 90% of known VLs were undetectable, suggesting that jail-based initiation of HCV treatment is feasible and that prompt access to DAAs in jail can preserve the effectiveness of community-initiated HCV regimens. Limitations of this analysis include that VLs were often measured before the standard 12-week threshold for confirming SVR. In addition, loss to follow up was high, although mostly among community-initiated patients. Because many patients who were lost to follow up plausibly completed their treatment course, this outcome does not necessarily equate to treatment failure. However, these findings do signal a need for strong services for linkage to care after release from jail to ensure treatment completion and confirmation of SVR. Despite using HIE and screening all patients for HCV treatment at the point of intake, it is possible we missed patients who did not report being on HCV treatment in the community. Such HCV treatment interruptions would not have been captured in this analysis.

Overall, the scale of this early treatment cohort is small compared with the large number of patients living with HCV in the jail system. The NYC jail system has approximately 50 000 admissions per year with an average daily census of 9500. It is estimated that approximately 12% of individuals who are incarcerated in this jail system are HCV-antibody positive and 9% have chronic HCV. Therefore, of approximately 125 000 admissions during this 30-month study period, 11 250 individuals with chronic HCV might have passed through the NYC jail system. Due to short lengths of stay, many individuals might have been incarcerated for as little as a few days, which would limit the ability to initiate treatment. Nevertheless, the rate of treatment for those with chronic HCV was approximately 104 of 11 250 (~1%). Similar rates of HCV treatment have been reported elsewhere in the state prison system [5]; therefore, it is evident that a more robust, multifaceted response is needed to address HCV in the criminal justice system [6]. Correctional Health Services has secured increased funding and negotiated preferred pricing that will expand treatment capacity. Across the United States, as treatment capacity increases, strong HCV treatment and linkage services will be needed to meet the demands of this emerging healthcare delivery challenge.

CONCLUSIONS

This analysis demonstrates that treatment initiation and continuation are both feasible in jails making these institutions a key point of intervention in a public health strategy to eliminate HCV. However, healthcare funding in jail is left to localities rather than programs such as Medicaid, which represents a barrier to DAA availability. Without resources and systems in place for HCV treatment in jail, detention may hinder elimination efforts by limiting the number of patients who can be initiated

Downloaded from https://academic.oup.com/ofid/article/4/3/ofx142/3932987 by guest on 17 April 2024

on therapy in this setting. In addition, interrupting community-initiated patients may promote viral resistance due to incomplete treatment or interruptions in therapy. For both jail- and community-initiated patients, robust processes to link patients to community partners and payers after release will be essential in scaling up jail-based HCV treatment.

Acknowledgments

Potential conflicts of interest. All authors: No reported conflicts of interest. All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

References

1. Afdhal N, Reddy KR, Nelson DR, et al. Ledipasvir and sofosbuvir for previously treated HCV genotype 1 infection. N Engl J Med **2014**; 370:1483–93.
2. Liu S, Watcha D, Holodniy M, Goldhaber-Fiebert JD. Sofosbuvir-based treatment regimens for chronic, genotype 1 hepatitis C virus infection in U.S. incarcerated populations: a cost-effectiveness analysis. Ann Intern Med **2014**; 161:546–53.
3. He T, Li K, Roberts MS, et al. Prevention of hepatitis C by screening and treatment in U.S. prisons. Ann Intern Med **2016**; 164:84–92.
4. Minton TD, Golinelli D. Jail Inmates at Midyear 2013 - Statistical Tables. Bureau of Justice Statistics. Available at: http://www.bjs.gov/content/pub/pdf/jim13st.pdf. Accessed 2 September 2016.
5. Beckman AL, Bilinski A, Boyko R, et al. New hepatitis C drugs are very costly and unavailable to many state prisoners. Health Aff (Millwood) **2016**; 35:1893–901.
6. Rich JD, Allen SA, Williams BA. Responding to hepatitis C through the criminal justice system. N Engl J Med **2014**; 370:1871–4.

Downloaded from https://academic.oup.com/ofid/article/4/3/ofx142/3932987 by guest on 17 April 2024