

Implementing a Co-located HCV Clinic within an HIV Clinic: Four Year Experience

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Background

Of the 1.2 M persons living with HIV in the United States, about 25% are co-infected with HCV. Even with the availability of highly effective direct antiviral agents (DAAs), the goal of HCV elimination requires improvements to the HCV treatment cascade, especially linkage to and initiation of treatment in underserved populations. We have implemented a co-located HCV clinic within our HIV clinic to circumvent barriers to HCV treatment.

Methods

Study subjects were selected from a cohort of HIV/HCV co-infected patients receiving care at the Nathan Smith Clinic of Yale-New Haven Hospital from June 2002 through April 2017. Between 3/1/2012 and 4/1/2017, all co-infected patients were referred for consultation for DAA treatment to the on-site HCV co-infection clinic or referred externally. This clinic was staffed by 3 physicians (received additional HCV training and were designated DAA prescribers), 1 physician assistant, 1 registered nurse, there was access to a specialty pharmacy. Clinic infrastructure, screening and treatment algorithms, standard electronic medical record templates were developed; regular team meetings were held to review progress and treatment outcomes. Patient enrollment for treatment began in 1/2014. Demographic and clinical parameters were abstracted and treatment status and outcomes were followed longitudinally for the cohort; all data were entered into a REDCap data repository. Statistical analysis was performed using SAS v9.4 (SAS Institute Inc., Cary, NC).

Results

Of the 173 total co-infected patients, 134 (77.46%) were between 51-70 years old; 115 (66.47%) were males and 99 (57.23%) were African Americans. Comorbidities included: cirrhosis (25.43%); mental health issues (60.69%); alcohol abuse (30.64%); active drug use (54.34%). The majority, 140 (80.92%) had HCV genotype 1 (Table 1). The cumulative and monthly trend in treatment initiations starting in 1/2014 is shown in Figure 1. Status within the treatment cascade is shown in Figure 2: 157 (90%) were referred to DAA prescriber, 140 (89%) were linked (appointment kept) to DAA prescriber, and 102 (59%) were prescribed DAA therapy. Of the patients who were prescribed treatment (n=102), 84 (82%) had documented SVR12, 1 (1%) failed, 4 (4%) were awaiting SVR12 documentation, 7 (7%) were on therapy, 4 (4%) stopped therapy early, and 2 (2%) were lost to follow up. There were no re-infections. The overall SVR12 rate was 47%. Comparing those who were linked and started treatment (N=102) to those who did not (N=38), being female was associated with lack of treatment (p=0.02). The HCV genotype, presence of advanced liver disease, renal disease, co-occurring alcohol abuse, mental health issues or active drug use were not associated with lack of treatment (Table 2).

Conclusion

Establishing a co-located HCV clinic within an HIV clinic has been successful in facilitating pre-treatment evaluation in 90% of co-infected patients with overall SVR achieved in 47% of patients (82% of treated patients). This compares favorably with published national HCV treatment cascades in mono-infected patients. In general, comorbidities including alcohol and substance abuse and mental health issues were not significantly associated with lack of treatment with DAAs; female gender was significantly associated with lack of treatment. Additional patient and provider barriers to completing clinic-wide HCV elimination are being analyzed. New approaches for promoting engagement in care are needed.

Table 1. Baseline characteristics of HIV/HCV Co-infected Patients at Nathan Smith Clinic

Characteristics	Total N=173 (%)
Age (n (%))	< 50 years old 37(21.39) 51-70 years old 134(77.46) >70 years old 2(1.16)
Race means (SD)	Male 56(32) Female 115(66.47) 58(33.53)
Gender (n (%))	White or Caucasian 43(24.86) Black or African American 99(57.23) American Indian or Alaska Native 10(5.8) Hispanic 23(13.29) Other/Undown 6(3.47)
Race (n (%))	Patient Referred 10(5.8) Medicaid 90(52.02) Medicare 63(36.42) Private 17(9.83) Other 10(5.8) Self Pay 10(5.8) Insurance (n (%))
Chronic disease (n (%))	44(25.43) 44(25.43)
Alcohol Abuse (n (%))	59(30.64)
Mental Health/AD/Issues (n (%))	105(60.69)
Active Drug Use (n (%))	94(54.34)
HCV Genotype (n (%))	1 Unspecified 10(5.8) 1a 108(62.43) 1b 28(16.18) 2 8(4.62) 3 13(7.51) 4 7(4.05) Not done, not classified 5(2.89)

Figure 2. Flow Diagram for Care Parameters for HIV/HCV Co-infected Patients

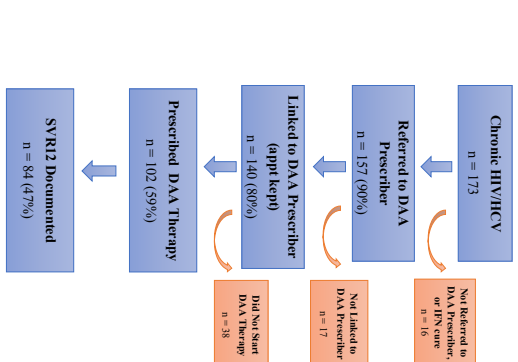


Figure 1. Cumulative and Monthly Treatment Initiations

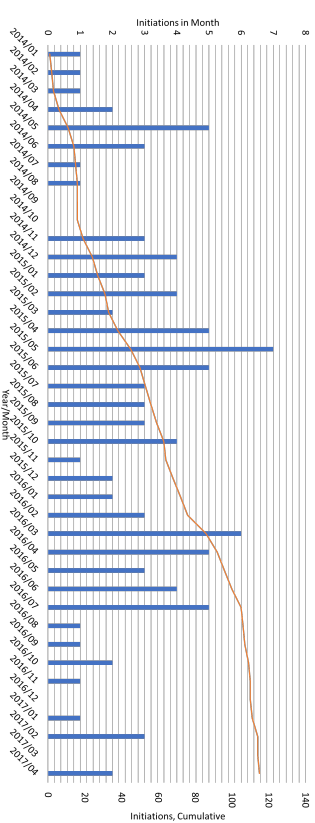


Table 2. Comparison of Linked Patients-Treated vs Not Treated

Characteristic	Total N	Treated	Linked but not treated	p-value
Age (n (%))	173	107 (61.69)	56 (32.63)	0.89
<50yo and >70yo	118(68.14)	61(51.38)	31(26.55)	
Gender (n (%))	21 (43)	17(80.95)	4(19.05)	0.02
Male	98(70.00)	57(57.23)	19(19.44)	0.1492
Female	42(30.00)	35(83.33)	7(16.67)	
Race (n (%))	31(48.47)	30(96.77)	1(3.23)	
White or Caucasian	31(82.05)	29(93.55)	2(6.45)	
Black or African American	31(82.05)	29(93.55)	2(6.45)	
American Indian or Alaska Native	31(82.05)	29(93.55)	2(6.45)	
Hispanic	31(82.05)	29(93.55)	2(6.45)	
Other/Undown	31(82.05)	29(93.55)	2(6.45)	
Patent Refused	31(82.05)	29(93.55)	2(6.45)	
Medicaid	31(82.05)	29(93.55)	2(6.45)	
Medicare	31(82.05)	29(93.55)	2(6.45)	
Private	31(82.05)	29(93.55)	2(6.45)	
Other	31(82.05)	29(93.55)	2(6.45)	
Self Pay	31(82.05)	29(93.55)	2(6.45)	
Insurance (n (%))	31(48.47)	30(96.77)	1(3.23)	
Patient Referred	31(82.05)	29(93.55)	2(6.45)	
Medicaid	31(82.05)	29(93.55)	2(6.45)	
Medicare	31(82.05)	29(93.55)	2(6.45)	
Private	31(82.05)	29(93.55)	2(6.45)	
Other	31(82.05)	29(93.55)	2(6.45)	
Self Pay	31(82.05)	29(93.55)	2(6.45)	
Chronic disease (n (%))	31(48.47)	30(96.77)	1(3.23)	
Alcohol Abuse (n (%))	31(48.47)	30(96.77)	1(3.23)	
Mental Health/AD/Issues (n (%))	31(48.47)	30(96.77)	1(3.23)	
Active Drug Use (n (%))	31(48.47)	30(96.77)	1(3.23)	
HCV Genotype (n (%))	31(48.47)	30(96.77)	1(3.23)	
1 Unspecified	31(48.47)	30(96.77)	1(3.23)	
1a	31(48.47)	30(96.77)	1(3.23)	
1b	31(48.47)	30(96.77)	1(3.23)	
2	31(48.47)	30(96.77)	1(3.23)	
3	31(48.47)	30(96.77)	1(3.23)	
4	31(48.47)	30(96.77)	1(3.23)	
Not done, not classified	31(48.47)	30(96.77)	1(3.23)	