Treatment of HCV NS3/4a protease inhibitor experienced patients with sofosbuvir containing regimens in an Outpatient Clinic

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Abstract

Background: We assessed the success rate of retreatment with a sofosbuvir containing regimen in HIV/ HCV genotype 1 coinfected patients who failed a regimen containing an HCV protease inhibitor in a HIV Primary care clinic.

Methods: A retrospective review of outpatient medical records was conducted to identify HCV Genotype 1 co-infected patients whose last HCV regimen included an NS3/4a protease inhibitor, had failed treatment, and were retreated with sofosbuvir containing regimen between January 2014-December 2015. All had suppressed HIV viremia prior to treatment initiation. HIV and HCV care was provided by the primary provider who consisted of 4 infectious disease physicians, two internists and one physician assistant. Referral to a Hepatologist and medication review by a Pharmacist was decided by the primary provider. Age gender, ethnicity, prior HCV treatment regimen, change in antiretroviral regimen and SVR 12 rates were collected and tabulated.

Results: 14 patients were retreated during this two year period; 13 males and 1 female. 4(29%) were Black, 8(57%) Caucasian, 2(14%) Hispanic. Age ranged from 37-69. 12(86%) had genotype 1a, 1 (7%) genotype 1b, 1 had genotype 1a/1b. 9(64%) were treated previously with Pegylated Interferon-Ribavirin (Peg-RBV) plus telaprevir, 2 (14%) simeprevir/sofosbuvir, 1 (7%)Peg-RBV/faldaprevir, 1(7%) Peg-RBV/ simeprevir, 1(7%) Peg-RBV/sofosbuvir. HIV regimen was changed in 5(36%) patients prior to HCV treatment due to drug-drug interactions. 7(50%) patients were F4, 1(7%) patient was F2-3, 3(21%) patients were F2, 2(14%) patients were F1, 1 (7%) patient had an unknown fibrosis status. 10(71%) were treated with ledipasvir/sofosbuvir, 2(14%) were treated with simeprevir/sofosbuvir, 1(7%) was treated with ledipasvir/sofosbuvir/ribavirin, 1(7%) was treated with Peg-RBV/sofosbuvir. 13(93%) patients obtained an SVR12 and 1 (7%) patient was lost to follow up after 8 weeks of ledipasvir/sofosbuvir.

Conclusion: In this group of HIV co-infected Genotype 1 HCV NS3/4a protease inhibitor experienced patients, retreatment with ledipasvir/sofosbuvir with or without ribavirin and Peg-RBV-sofosbuvir, 93% SVR12 was achieved in an HIV primary care setting using a multidisciplinary approach.

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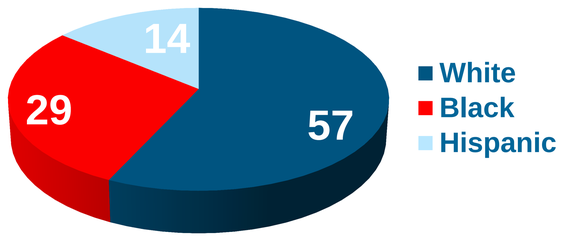
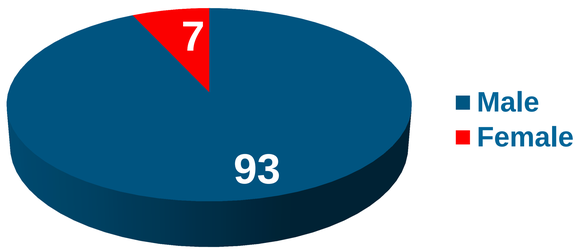
Results

Gender and Race of Subjects, Percent (n=14)





- Age Range 37-69

FIBROSIS SCORE	n (%)
F4	7(50)
F2-3	1(7)
F2	3(21)
F1	2(14)
ACUTE TO CHRONIC	1(7)

PRIOR TREATMENT EXPERIENCE	n (%)
PEG-RIBA+NS3/4a PI	10 (71)
SIMEPREVIR-SOFOSBUVIR	2 (14)
PEG-RIBA-SOFOSBUVIR	1 (7)
PEG-RIBA-SIMEPREVIR	1 (7)

HCV TREATMENT REGIMEN	n (%)
LEDIPASVIR-SOFOSBUVIR	10 (71)
LEDIPASVIR-SOFOSBUVIR-RIBA	1 (7)
SIMEPREVIR-SOFOSBUVIR	2 (14)
PEG-RIBA-SOFOSBUVIR	1 (7)

Characteristics of 14 Patients

Genotype	Fibrosis	HIV regimen Prior to Tx	HIV Regimen Change	Prior HCV Rx	Retreatment Regimen	Review by Hepatologist	SVR12
1a	F4	TDF/FTC/RPV+DTG	None	Peg-Riba-TVR	Led-Sof	N	Y
1a	F4	TDF/FTC/EFV	None	Peg-Riba-TVR	Led-Sof	N	Y
1a	F4	TDF/FTC/EFV	None	Peg-Riba-TVR	Led-Sof	N	Y
1a	F4	TDF/FTC+ RTV+ ATV	TDF/FTC/RPV	Peg-Riba-TVR	Sim-Sof	N	Y
1a	F1	FTC+RAL+ETR	FTC+RAL+RPV	Peg-Riba-TVR	Led-Sof	Y	Y
1a	F4	TDF+RAL+ AZT/ABC/3TC	None	Peg-Riba-TVR	Led-Sof	Y	N *
1a	F4	TDF/FTC+RAL	None	Peg-Riba-TVR	Led-Sof+Riba	N	Y
1a	F2	TDF/FTC+RTV+DRV	TDF/FTC/RPV	Peg-Riba-TVR	Sim-Sof	N	Y
1b	F2-3	ABC/3TC+ EFV+RAL	None	Peg-Riba-Faldaprevir	Peg-Riba+Sof	N	Y
1a	F2	TDF/FTC/RPV	None	Peg-Riba-Sim	Led-Sof	N	Y
1a	F1	ABC/3TC+ RTV+ ATV	None	Peg-Riba-TVR	Led-Sof	N	Y
1a/1b	Acute to Chronic	TDF/FTC+LPV/r+ RAL	ABC/3TC+LPV/r+ RAL	Peg-Riba-Sof	Led-Sof	N	Y
1a	F4	TDF/FTC+NFV	TDF/FTC/RPV	Sim-Sof	Led-Sof	N	Y
1a	F2	TDF/FTC+ DTG	None	Sim-Sof	Led-Sof	Y	Y

*Lost to follow up after 8 weeks

HIV Medication KEY: ABC=abacavir, ATV=atazanavir, AZT=zidovudine, DRV=darunavir, DTG=dolutegravir, EFV=efavirenz, ETR=etravirine, FTC=emtricitabine, LPV/r=Lopinavir/ritonavir, NFV=nelfinavir, RAL=raltegravir, RPV=rilpivirine, RTV=ritonavir, TDF=tenofovir disoproxil fumarate, 3TC=lamivudine

HCV Medication KEY: Peg-Riba= pegylated interferon+ribavirin, LED-SOF=ledipasvir/sofosbuvir, SIM=simeprevir, SOF=sofosbuvir, TVR=telaprevir

Discussion

In ION-4 which evaluated the role of ledipasvir/sofosbuvir in HIV/HCV co-infection, 185 patients had been previously treated with the following regimens with an SVR rate of 96.8% (CI 93.1% to 98.8%)

- Pegylated interferon/Ribavirin (118)
- Pegylated interferon/Ribavirin + telaprevir (34)
- Pegylated interferon/Ribavirin + boceprevir (14)
- Sofosbuvir/ribavirin (13)
- Pegylated interferon/Ribavirin + simeprevir (3)
- Pegylated interferon/Ribavirin + faldaprevir (2)
- Simeprevir/ribavirin (1)

53 patients in ION-4 received prior DAA therapy that included an HCV PI + pegylated interferon + ribavirin.

In ION-4, 98.1 % (CI 89.9%-100%) attained an SVR 12.

Similar to ION-4, the majority of our patients had also received PR + telaprevir (9/14) and all of our patients received sofosbuvir-based regimens, mostly in combination with ledipasvir.

Response rate in our study (93%) mirrors SVR rates of 98.1% in ION-4 for PI- and sofosbuvir- treatment experienced patients.

Comparison of ION-4 and AMC Data

Prior Regimen Type	ION-4 (%,n)	Current Analysis (%,n)
DAA + Peg-Riba	98.1 (52/53)	91.6 (11/12)
Dual DAA (SIM/SOF)	N/A	100 (2/2)
DAA + Riba	100 (14/14)	N/A

Conclusion

The role of HCV management in HIV/HCV co-infection can be complex. Our study results demonstrate that successful management of HIV/HCV co-infected patients can be done in a busy primary care HIV clinic using a multidisciplinary approach. SVR12 rates are similar in our analysis compared to published results even in PI- and DAA- experienced patients.

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