# Interferon-free Hepatitis C treatment increases surrogate of cardiovascular disease risk in Black Veterans

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## INTRODUCTION

- Hepatitis C virus (HCV) usurps hepatic lipoproteins to sustain its life cycle.
- Untreated HCV infection decreases low density lipoprotein (LDL) and total cholesterol (TC) levels. After sustained virologic response (SVR), there is an initial increase in LDL and TC, which may ultimately increase cardiovascular disease (CVD) risk.
- In contrast, SVR with either Interferon (IFN)-based or IFN-free regimens with direct-acting antivirals (DAAs) has been shown to reduce CVD events in majority white populations stratified by ASCVD score.
- Statins are the mainstay of therapy to reduce CVD risk. However, statin use is limited by drug-drug interactions with antiretrovirals and direct-acting antivirals in patients with HIV and HCV.
- The effect of IFN-free therapy on lipid profiles after SVR, as an indirect measure of CVD risk, is unknown in Black patients.

## AIM

- Describe trends in lipids, as a surrogate marker of ASCVD risk, more than 1 year after DAA treatment and SVR, in our real-world Veteran population.
- Evaluate factors that influence lipid levels after SVR.

## METHOD

- We evaluated HCV-infected Veterans from the Baltimore VA who were treated with DAAs between 2015-2019.
- We performed a retrospective analysis using linear regression to identify factors that contributed to SVR. We also compared
  1) lipid profile changes following SVR between those with early stage (F0-F2) fibrosis and advanced liver disease (ALD, F3-F4 fibrosis)
  2) differences in lipid profiles based on fibrosis stage in patients with HIV (combined effect) and Type II Diabetes Mellitus (DM2)

## RESULTS

- Of those treated for HCV (n=1,528), 96% (n=1,474) achieved SVR.
- Most patients were Black males (75%) and a minority (2.7%) received statin therapy during treatment.
- Of 1,191 patients for whom data was available, lower triglyceride (TG) levels prior to DAA treatment was significantly associated with achieving SVR (median 106 vs. 127, p = 0.031).
- Among those who achieved SVR, a significant increase in change in LDL was seen in the ALD group compared to early stage, as well as those with HIV (combined effect of HIV and ALD) (p = 0.037) (Figure 1).
- Last, among those with DM2, ALD was associated with an increase in TG post-SVR (p = 0.045).

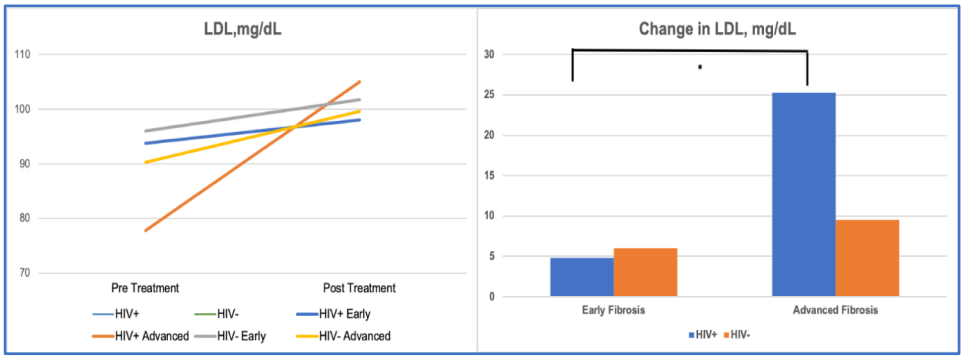


Figure 1. Changes in LDL pre- and post- SVR. (A) Increases in LDL among HIV+ and HIV- patients with early and advanced liver fibrosis. Significant increases in LDL were seen in HIV+ patients with ALD. (B) Significantly higher mean changes in LDL pre- and post-SVR in patients with HIV and advanced fibrosis compared to HIV+ patients with early fibrosis and HIV- patients. *= p<0.05

## CONCLUSIONS

- In a cohort of mostly Black HCV-infected Veterans, we had a 96% SVR rate, which is higher than reported in other real-world cohorts.
- Patients with HIV and ALD have a significantly higher increase in LDL after achieving SVR, suggesting that they may have increased risk for ASCVD after HCV treatment.
- Lower pre-treatment TG levels significantly impact achievement of SVR, and increases in TG post-SVR were seen in patients with DM2 and ALD.
- Overall, these findings suggest that patients with ALD should have optimization of glucose control and hypertriglyceridemia prior to DAA treatment, to increase the probability of achieving SVR.
- In addition, patients with HIV and ALD should have correlates of CVD risk optimized after SVR, in order to reduce the long-term risk of CVD.
- Furthermore, statin therapy in Veterans with HIV and HCV may be underutilized and adjustments in prescribing practices may reduce CVD risk in this population.

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