Does a Detectable Viral Load during Hepatitis C Treatment at Week 4 Predict Virologic Failure in an 8-Week Course of Ledipasvir-Sofosbuvir in Treatment-Naïve Patients with Genotype 1 Infection without Cirrhosis?

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Abstract

Background: Treatment of Hepatitis C virus (HCV) with a shorter duration of 8 weeks of ledipasvir-sofosbuvir has resulted in high rates of sustained virologic response (SVR) similar to a 12-week duration in treatment-naïve patients with genotype 1 infection without cirrhosis. This treatment strategy yields the opportunity to significantly reduce healthcare costs and associated adverse effects. The objective of this study is to assess if a detectable HCV RNA viral load at Week 4 predicts failure for an 8-week course of ledipasvir-sofosbuvir.

Methods: A retrospective, quality assurance chart review was conducted at the W.G. (Bill) Hefner VA Medical Center in Salisbury, North Carolina, where 442 patients have completed a HCV treatment course of ledipasvir-sofosbuvir from January 2015 to October 2016. Treatment-naïve, HCV genotype 1 patients without cirrhosis who received 8 weeks of ledipasvir-sofosbuvir were assessed. The association between SVR and detectable HCV RNA viral loads at Week 4 of treatment using COBAS AMPLIPREP/TaqMan with a lower limit of quantification of 15 international units (IU) per mililiter (mL) was evaluated.

Results: Overall, 55 of 61 patients (90.1%) receiving 8 weeks of ledipasvir-sofosbuvir achieved SVR. Of the 55 patients that achieved SVR, 46 patients (83.6%) had nondetectable HCV RNA viral loads at Week 4 of treatment whereas 9 patients (16.4%) had a detectable HCV RNA viral load at Week 4 (p = 0.83). For the 5 patients that relapsed on 8 weeks of ledipasvir-sofosbuvir, 4 patients (80%) had nondetectable HCV RNA viral loads at Week 4 of treatment whereas 1 patient (20%) had a detectable HCV RNA viral load at Week 4.

Conclusions: Detectable HCV RNA viral loads at Week 4 do not appear to negatively impact SVR in treatment-naïve, HCV genotype 1 patients without cirrhosis treated with 8 weeks of ledipasvir-sofosbuvir. Additionally, relapse is possible despite nondetectable HCV RNA viral loads during treatment.

Background

Treatment of HCV with a shorter duration of 8 weeks of ledipasvir-sofosbuvir has resulted in high rates of SVR similar to a 12-week duration in treatment-naïve patients with genotype 1 infection without cirrhosis. This treatment strategy yields the opportunity to significantly reduce healthcare costs and associated adverse effects. The objective of this study is to assess if a detectable HCV RNA viral load at Week 4 predicts failure for an 8-week course of ledipasvir-sofosbuvir.

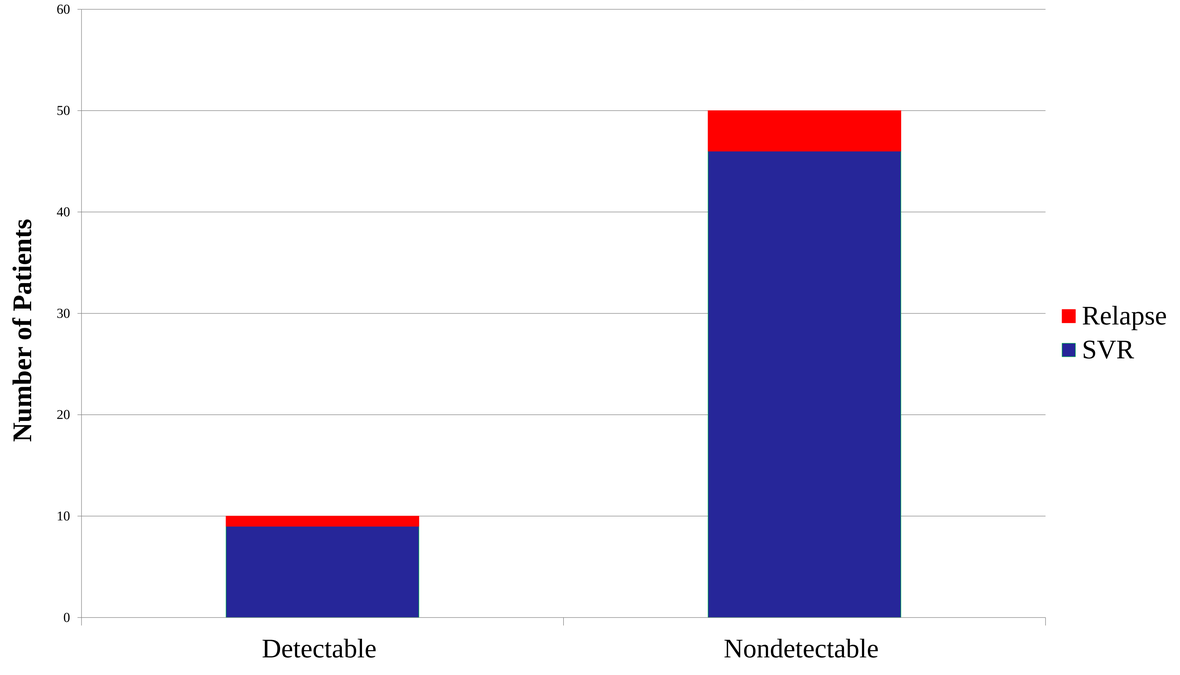
Methods

A retrospective, quality assurance chart review was conducted at the W.G. (Bill) Hefner VA Medical Center in Salisbury, North Carolina, where 442 patients have completed a HCV treatment course of ledipasvir-sofosbuvir from January 2015 to October 2016. Treatment-naïve, HCV genotype 1 patients without cirrhosis who received 8 weeks of ledipasvir-sofosbuvir were assessed. Liver fibrosis staging was routinely performed with either vibration controlled transient elastography (VCTE) or liver biopsy. However, FibroSure was rarely utilized in select patients. The association between SVR and detectable HCV RNA viral loads at Week 4 of treatment using COBAS AMPLIPREP/TaqMan with a lower limit of quantification of 15 IU/mL was evaluated.

Demographic and Clinical Characteristics of Patients at Baseline (N = 61)

Age - Years	
Mean	61
Range	29 – 70
Body Mass Index	
Mean	27.3
Range	19 – 45
Gender – No. (%)	
Male	58 (95.1)
Ethnicity – No. (%)	
Caucasian	21 (34.4)
African American	40 (65.6)
HCV Genotype – No. (%)	
1a	49 (80.4)
1b	11 (18)
1 without confirmed subtype	1 (1.6)
Baseline HCV RNA Viral Load	
HCV RNA – $\log_{10}$ IU/mL	5.9 ± 0.8
HCV RNA ≥ 800,000 IU/mL – No. (%)	42 (68.9)
Fibrosis Score – No. (%)	
F0 – F2	46 (75.4)
F3	15 (24.6)
Potential Drug Interactions with Ledipasvir-Sofosbuvir – No. (%)	
Potential drug interactions	24 (39.3)

HCV RNA Viral Loads at Week 4 and SVR Results with Ledipasvir-Sofosbuvir for 8 Weeks



Number of Detectable/Nondetectable HCV RNA Viral Loads at Week 4 (N = 60)

Results

Overall, 55 of 61 patients (90.1%) receiving 8 weeks of ledipasvir-sofosbuvir achieved SVR. Of the 55 patients that achieved SVR, 46 patients (83.6%) had nondetectable HCV RNA viral loads at Week 4 of treatment whereas 9 patients (16.4%) had a detectable HCV RNA viral load at Week 4 (p = 0.83). For the 5 patients that relapsed on 8 weeks of ledipasvir-sofosbuvir, 4 patients (80%) had nondetectable HCV RNA viral loads at Week 4 of treatment whereas 1 patient (20%) had a detectable HCV RNA viral load at Week 4. One patient failed to complete HCV treatment due to noncompliance, and no Week 4 HCV RNA viral load was collected. No significant difference was detected in SVR rates between patients with F0 – F2 fibrosis (89.1%) and F3 fibrosis (93.3%).

Conclusions

Detectable HCV RNA viral loads at Week 4 do not appear to negatively impact SVR in treatment-naïve, HCV genotype 1 patients without cirrhosis treated with 8 weeks of ledipasvir-sofosbuvir. Additionally, relapse is possible despite nondetectable HCV RNA viral loads during treatment.

References

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