Direct-acting antiviral (DAA) for Hepatitis C: Therapy completion in the real world

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Background

Hepatitis C virus (HCV) infection therapy has evolved over time. Second generation direct-acting antivirals (DAA) can cure 90% or more of patients who complete therapy in observational studies. We aimed to describe effectiveness, in terms of completion rates, in the real world.

Objective

To compare completion rates in HCV patients starting therapy with second generation DAAs:

- Simeprevir/sofosbuvir (SIM/SOF)
- Ledipasvir/sofosbuvir (LDV/SOF)
- Ombitasvir/paritaprevir/ritonavir/dasabuvir (OPrD)
- Sofosbuvir/velpatasvir (SOF/VEL)
- Elbasvir/grazoprevir (EBR/GZR)

Methods

Study design: Retrospective cohort study of adults with HCV using Truven Health MarketScan® Research Data, 2014-2016.

Outcome: Therapy completion

- Sum of days supplied by all pharmacy claims during 12 weeks = 84 days (12 weeks)
- No other pharmacy claim for a different drug regimen during 12 weeks
- LDV/SOF: proportion of patients who received 12 or 8 weeks of therapy

Covariates: age, sex, co-morbidities, history of drug and alcohol use disorder, indicators of health service use, ribavirin during follow-up, past HCV drugs (interferon, ribavirin, bocepravir, and telaprevir), type of health plan.

Statistical analysis: Multivariate logistic regression.

Results

- 18,392 HCV patients were included: 72.1% LDV/SOF, 12.6% OPrD, 11.9% SIM/SOF, 1.9% SOF/VEL, 1.5% EBR/GZR
- OPrD, LDV/SOF, and SIM/SOF were primarily used before 2016, when EBR/GZR and SOF/VEL received FDA approval.
- Median age: 58 years (interquartile range 54-62)
- 61.5% were male.

Baseline:

- Patients using EBR/GZR: highest frequency of anemia (39.1%) and diabetes (40.1%)
- Patients using SIM/SOF: highest frequency of cirrhosis (47.9%), hepatic decompensation (24.1%) and previous HCV drugs (15.6%).
- Patients using EBR/GZR (5.4%) and SOF/VEL (2.7%) had the lowest frequency of prior HCV drugs.

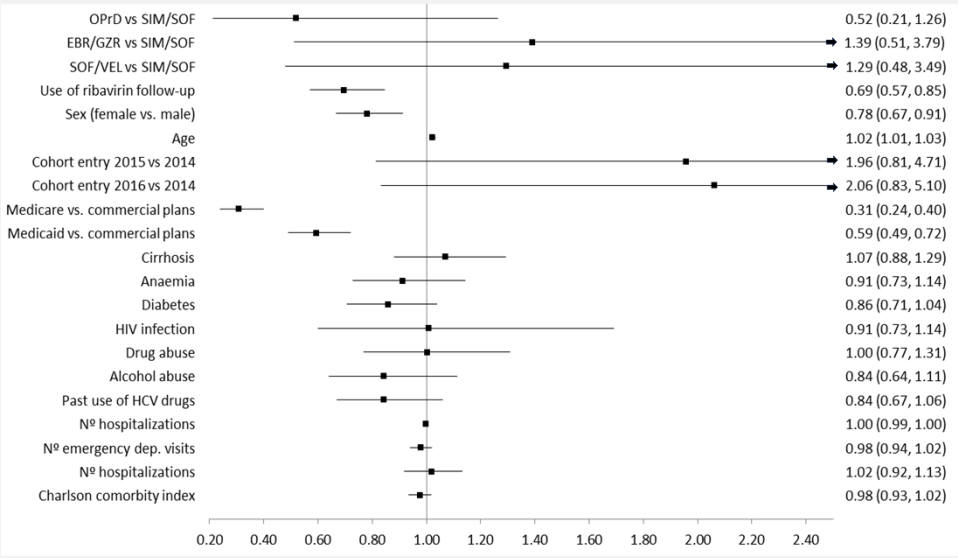
Therapy completion

- Overall therapy completion rates were above 82.0% for DAA agents (Table 1)
- LDV/SOF: 22.2% received an 8 week course, and an additional 74.6% received 12 weeks or more of therapy.

Table 1. Proportions (95% confidence interval) of therapy completion.

Patients	OPrD	EBR/GZR	SIM/SOF	SOF/VEL
Over all cohort	82.1 (80.6-83.7)	92.1 (89.0-95.3)	83.9 (82.4-85.5)	92.9 (90.2-95.7)
Non-cirrhotic	83.2 (81.5-84.9)	91.0 (87.0-94.9)	83.6 (81.5-85.8)	92.4 (89.0-95.8)
Cirrhotic	78.3 (74.7-81.9)	95.0 (90.2-99.8)	84.3 (82.1-86.5)	94.2 (89.7-98.7)
No past HCV drugs	83.0 (81.3-84.6)	92.0 (88.8-95.3)	83.8 (82.1-85.5)	93.1 (90.3-95.8)
Past HCV drugs	74.2 (68.4-80.0)	93.3 (80.7-100)	84.8 (81.0-88.6)	88.9 (68.3-100)

Figure 1. Adjusted odds ratio and 95% confidence interval for therapy completion (N=5127).



Summary & Conclusions

- We were unable to detect a difference among OPrD, SOF/VEL, EBR/GZR, and SIM/SOF (Figure 1).
- Women, users of ribavirin during follow-up and Medicare and Medicaid patients were less likely to complete therapy (Figure 1).
- We were unable to establish any clear effects specifically related to baseline co-morbidity, drug or alcohol use, or with past health care use (Figure 1).
- The factors associated with therapy completion should be explored in future studies.