



# Evaluation of the clinical and economic value of sofosbuvir / velpatasvir (SOF / VEL) in patients with chronic hepatitis C in Spain during the last 5 years

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## BACKGROUND

- The introduction of direct-acting antivirals in the therapeutic arsenal for the treatment of hepatitis C virus (HCV) infection represented a paradigm shift.
- Sofosbuvir/velpatasvir (SOF/VEL; Epclusa<sup>®</sup>) has added value to HCV treatments, achieving high response rates that lead to a cure in most HCV chronic patients.

## OBJECTIVE

- To evaluate the long-term impact on health and economic outcomes of patients with chronic hepatitis C treated with SOF/VEL during the first 5 years after its approval in Spain (2017-2022).

## METHODS

- A previously developed lifetime Markov [1] model was adapted to estimate HCV morbidity and mortality comparing two treatment alternatives: SOF/VEL versus previous therapies (peginterferon and ribavirin in double/triple therapy with telaprevir or boceprevir).
- The model simulated disease progression between different health states (mild or mode-rate fibrosis, advanced fibrosis, compensated cirrhosis, decompensated cirrhosis, hepatocellular carcinoma and liver transplant) until death.
- The target population (30,488 patients) [2] entered the model during the first 5 years (22% 1st year, 26% 2nd, 22% 3rd, 13% 4th, 17% 5th) [3] and were distributed among the fibrosis states in treated or untreated (Table 1).
- Data associated with each treatment (Table 1):
  - SOF/VEL: all patients (100%) were treated regardless of fibrosis states (F0-F4) with an average weighted sustained virologic response (SVR) of 98.9% from real-world data [4].
  - Previous therapies to DAAs: only 49% of  $\geq$ F2 states HCV patients were treated, with 61% SVR [1].

## METHODS (CONTINUE)

- From Public Health System, only direct healthcare costs associated with disease management were included [1].
- All parameters required for the analysis (SVR, distribution of fibrosis states, transition probabilities, and health state costs, among others) were obtained from real-world data and the literature [1-4].
- The results were measured as the number of cases of decompensated cirrhosis (DC), hepatocellular carcinoma (HCC), and liver transplant as well as their costs associated, in addition to liver-related deaths, comparing both alternatives, and applying a discount rate (3%) to costs and healthcare outcomes [5].
- An alternative analysis was performed with a reduction in the SVR rate of SOF/VEL to 95%.

TABLE 1. ANALYSIS PARAMETERS

	Previous therapies to DAAs	Sofosbuvir/velpatasvir
<b>Total patients<sup>2</sup></b>	<b>30,488</b>	
<b>Patients treated in each stage of fibrosis<sup>2-3</sup></b>		
F0-F1	0 (0%)	10,318 (34%)
F2	5,127 (17%)	8,377 (27%)
F3	2,865 (9%)	5,430 (18%)
F4	7,062 (23%)	6,364 (21%)
<b>SVR rates<sup>1,4</sup></b>		
F0-F1	0.0%	99.4%
F2	61.2%	99.4%
F3	61.2%	99.6%
F4	60.6%	97.9%

SVR, Sustained virologic response

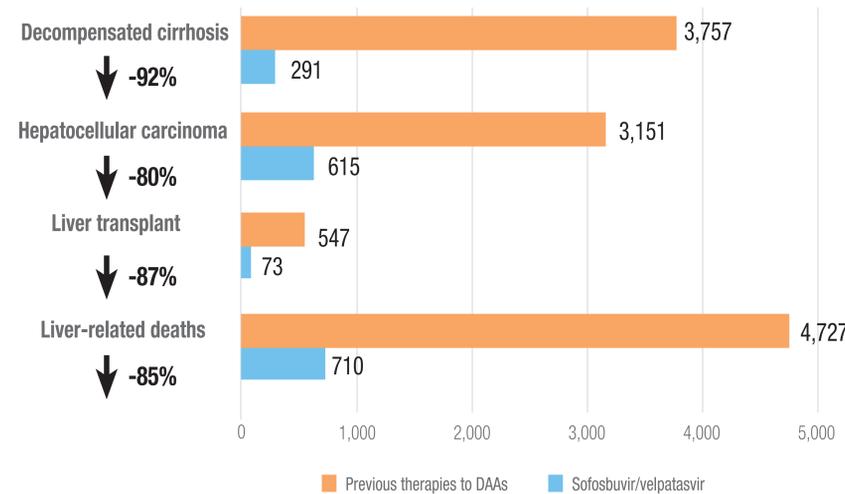
## CONCLUSION

- SOF/VEL add significant value to the management of patients with chronic hepatitis C and has achieved during these 5 years:
  - Treat a high number of patients obtaining high SVR rates.
  - Decrease HCV morbidity and mortality.
  - Reduce the economic burden of the disease.
  - And contribute to the goal of disease elimination in Spain.

## RESULTS

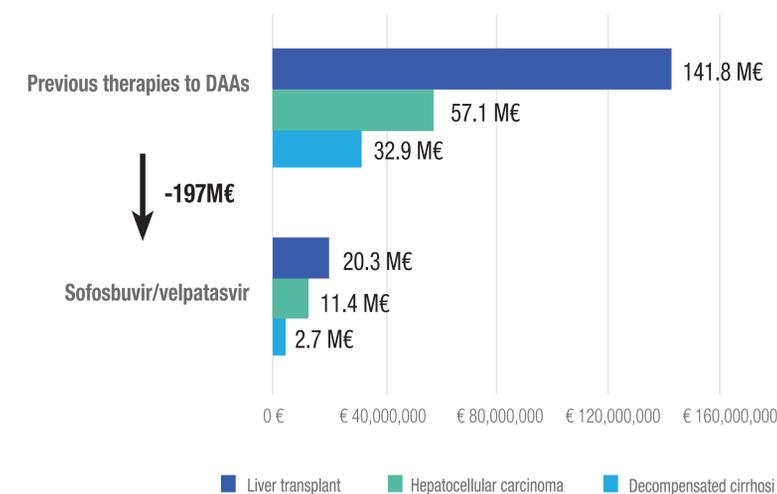
- In the analysis of SVR rate (98.9%), the lifetime results showed that SOF/VEL decreased liver-related deaths by 85% (4,017 cases avoided) as well as avoided cases of liver complications between 80% and 92%, having the greatest impact on DC.
- In economic terms, the costs associated with SOF/VEL in the management of liver complications generated a total saving of 197 millions of euros.

FIGURA 1. CLINICAL EVENTS AVOIDED



DAAs, direct-acting antivirals

FIGURE 2. AVOIDED COSTS ASSOCIATED WITH DISEASE MANAGEMENT



DAAs, direct-acting antivirals

- In the alternative analysis, a variation in the SVR rate from 98.9% to 95% decreased the impact on the reduction of avoided liver-related events between 75-86% and their associated costs by 183 millions of euros and decrease in the mortality to 79%.

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