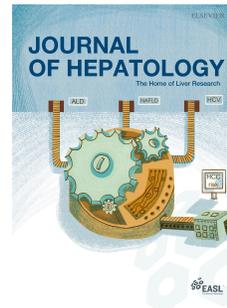


# Journal Pre-proof



Impact of the COVID 19 Pandemic on HCV Elimination in Spain

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**Letter to the Editor**

**Title:**

Impact of the COVID 19 Pandemic on HCV Elimination in Spain

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**Conflicts of Interest:**

MB: Advisory from Gilead and Abbvie. RDH and MAC are employees of Pharmacoeconomics & Outcomes Research Iberia, a consultancy firm specialising in the economic evaluation of healthcare interventions that has received unconditional funding from Gilead Sciences.

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**Authors' contribution statement:** All authors contributed equally to the concept and design, to the preparation of the manuscript and read and approved the final manuscript RDH performed the modelling analyses.

Journal Pre-proof

To the Editor,

We read with great interest the article by Sarah Blach and coworkers<sup>1</sup> investigating the impact of COVID-19 on the global hepatitis C elimination efforts. The authors show that over the next 10 years a *1-year delay* scenario related to COVID-19 would result in 44,800 excess hepatocellular carcinoma (HCC) cases globally and 72,300 excess liver-related deaths, relative to a *no delay* scenario. The excess HCC cases and deaths would be among high-income countries<sup>1</sup>.

Spain is one of the 45 high-income countries on the right track to reach HCV elimination by 2030 if the current screening and therapy rates are maintained<sup>2</sup>. However, COVID-19 strongly hit the country in March 2020 and continues to date. The first wave from March to June prompted a country-wide lockdown and the second wave has been ongoing since September. During this overall period, there has been a drop in HCV testing, linkage to care, harm reduction programs, and microelimination programs<sup>3</sup>. We aimed to assess the impact of COVID-19 on hepatitis C elimination in Spain.

A previously validated Markov model<sup>4</sup> was adapted to simulate the effect of pandemic-related delays in HCV diagnosis and treatment on future advanced liver-related disease and deaths in the next 10 years. We used the data obtained to evaluate repercussions on the WHO goals by 2030 and to calculate the economic impact regarding healthcare costs (€, 2020).

A cohort of 15,859 patients was analysed comparing two scenarios: the *non-COVID-19* scenario, where all patients would be diagnosed and treated in the first year, 2020, and the *COVID-19* scenario where there would be an 18-month delay from the beginning of 2020 to the end of June 2021 with a view to the expected vaccine availability in mid-2021. The simulation used clinical data from HCV patients treated with direct-acting antivirals in Spain (January 2019 to August 2020)<sup>5</sup>. In the COVID-19 scenario, the number of monthly HCV treatments was decreased between 19% and 84%<sup>5</sup> from early 2020 to June 2021. In addition, it was assumed that patients would be treated in the following year and a half (50% since July 2021 and 50% during 2022), based on the 2019 distribution of patients. Patients with a delay in diagnosis and treatment progressed according to the natural course of the disease. Cohort baseline characteristics

(average age and fibrosis) and sustained virological response were taken from published real-world data in Spain<sup>5</sup>.

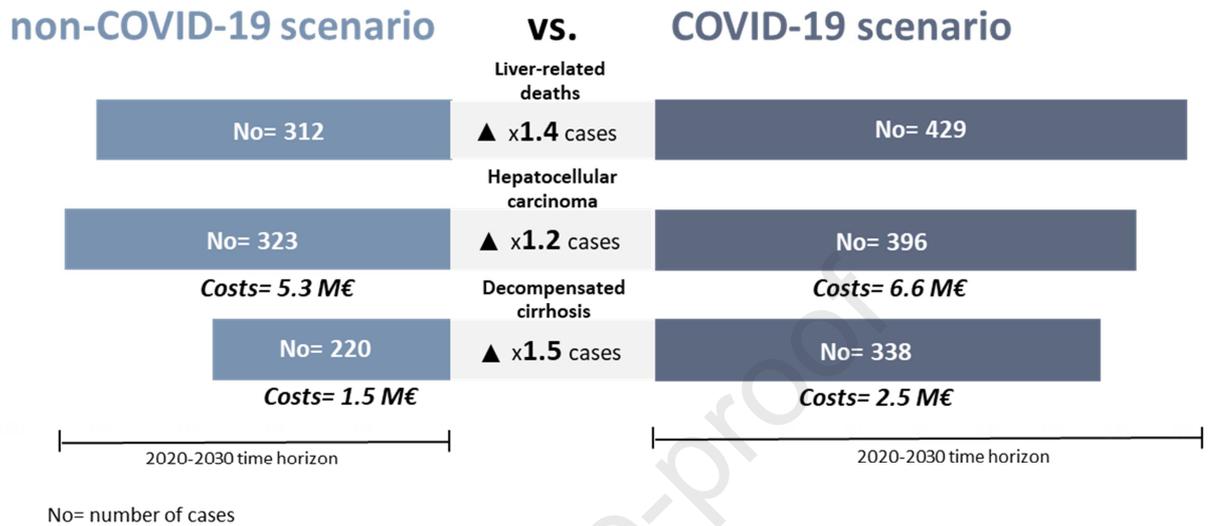
The figure 1 shows the results for both scenarios by 2030. An 18-month delay in HCV diagnosis and treatment due to the COVID pandemic in a cohort of 15,859 patients would increase the number of liver-related deaths, HCC, and HCV-related decompensated cirrhosis by 117, 73, and 118 cases, respectively. In economic terms this would translate to a 1.0 M€ cost increase due to decompensated cirrhosis and 1.3 M€ increase due to HCC. Furthermore, a high number of patients 14 (34 vs. 48) would need a liver transplant due to decompensated cirrhosis or HCC. The cost associated with liver transplantation would increase by 2.5 M€ (5.8 vs 83) for the total cohort during this period.

The data derived here are based on a simulation with 15,859 patients, but it is estimated that 76,839 people still have active HCV infection in Spain<sup>6</sup>. Thus, if a larger number of HCV patients is affected by COVID19 pandemic, the actual clinical and economic impact would be greater.

The data we report were estimated with a different methodology than that used by Blach<sup>1</sup> in her study on the global impact of COVID 19 on hepatitis C elimination. Nonetheless, the findings are similar: delaying HCV elimination programs will be associated with an increase in HCV-related morbidity and mortality in the next 10 years.

Spain was on track for HCV elimination, but the COVID-19 pandemic has hindered efforts to maintain the cascade of care for HCV and many microelimination programs<sup>7</sup>. The excess morbidity and mortality due to this delay will require reinforcement of screening programs, particularly in vulnerable populations and those with more difficult access to primary care physicians<sup>8</sup>. This will be possible mainly by applying the EASL guidelines for hepatitis C<sup>9</sup>. In summary, hepatitis C elimination must continue to be a political goal and a priority of our health system to achieve the WHO goals by 2030. The implementation of actions like telehealth, home-delivery services for drugs or HCV screening when COVID tests are performed, some of them already in place in some centers, could minimize the impact of COVID pandemic on HCV patients and HCV elimination.

**Fig. 1. Impact on HCV burden (clinical and economic) in the next 10 years because of the COVID-19-related diagnostic and treatment delay**



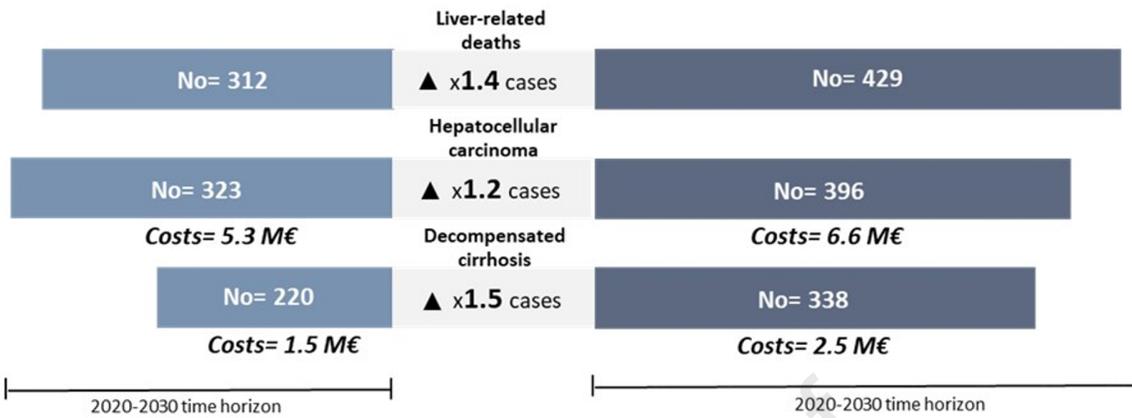
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## non-COVID-19 scenario

vs.

## COVID-19 scenario



No= number of cases