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PII: S0168-8278(21)01999-1
DOI: https://doi.org/10.1016/j.jhep.2021.08.005
Reference: JHEPAT 8396

To appear in: Journal of Hepatology

Received Date: 26 July 2021
Accepted Date: 4 August 2021

Please cite this article as: do Carmo RF, de Souza CDF, Impact of the COVID-19 pandemic on hepatitis C diagnosis in Brazil: Is the global hepatitis C elimination strategy at risk?, Journal of Hepatology (2021), doi: https://doi.org/10.1016/j.jhep.2021.08.005.

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Impact of the COVID-19 pandemic on hepatitis C diagnosis in Brazil: Is the global hepatitis C elimination strategy at risk?

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Keywords: coronavirus, COVID-19, elimination, HCV, viral hepatitis

Word count: 764 words

Number of figures and tables: 1 figure

Conflict of Interest: The authors have declared no conflicts of interest.

Financial support: None

Authors’ Contributions
R.F.C and C.D.F.S conceived the study, carried out the analysis and drafted the manuscript.
To the Editor:

We have read with interest the article by Blach et al. evaluating the impact of COVID-19 on global hepatitis C elimination efforts. A delay in elimination programs will be associated with an increase in global morbidity and mortality related to hepatitis C over the next 10 years [1]. The emergence of the new coronavirus responsible for COVID-19, at the end of 2019, placed great pressure on healthcare systems worldwide. In Brazil, the first case of COVID-19 was registered on February 26, 2020 [2]; since then, the country has been one of the main pandemic epicenters, ranking third in number of cases and second in number of deaths worldwide [3].

Due to the pandemic, the actions of surveillance and control programs for infectious diseases in Brazil have been severely affected, leading to regression in achievements made in recent years [4]. These include the viral hepatitis control program, which, in accordance with the World Health Organization, in 2018, launched a plan to eliminate hepatitis C by 2030. Some countries have already indicated significant impacts on diagnosis of new cases of hepatitis as a result of the COVID-19 pandemic [5,6]. Our objective, therefore, was to analyze the impact of the COVID-19 pandemic on the incidence and number of cases of hepatitis C in Brazil.

We conducted a time series study, involving all confirmed cases of hepatitis C registered in Brazil between January 2015 and December 2020. The period from 2015 to 2019 was used to calculate the expected number of cases of hepatitis C for the year 2020. Data were extracted from the Department of Chronic Conditions and Sexually Transmitted Infections of the Brazilian Ministry
of Health [7], and data on COVID-19 were extracted from the CoVida network [8].

For analysis, an adaptation of the P score was applied [9], considering the following equation:

\[
P - \text{Score} = \frac{\text{No. of HCV cases in 2020 (pandemic year)} - \text{Expected HCV case numbers in 2020}}{\text{Expected HCV case numbers in 2020}} \times 100
\]

Where:

The expected value of the event is calculated considering the average of the past five years, prior to the occurrence of the COVID-19 pandemic (2015 to 2019), as recommended [9]. The results are expressed as percentages, where positive values indicate excess, and negative values indicate a decrease in the number of cases.

Between 2015 and 2020, 129,499 new cases of hepatitis C were diagnosed in Brazil, 56.4% of which were male (n = 73,068). In 2020, 24,043 new cases were expected (incidence of 13.2/100,000 inhabitants). However, only 9,286 (5.2/100,000) were diagnosed. This represents a 61.4% decrease in the number of diagnoses and a 62.0% decrease in the incidence rate. A total of 14,700 individuals were not diagnosed in 2020. Females showed the greatest drop in the number of new diagnosed cases (number of cases: −63.5%; incidence rate: −64.0%) (Figure 1 A and B).

In relation to regions of Brazil, impacts were greatest in the Southeast Region (number of cases: −68.4%; incidence rate: −69.1%). In females, there was a 70.8% decrease in the number of cases diagnosed and a 71.5%
decrease in the incidence rate. These results indicate that approximately 4,600 men and 3,900 women with hepatitis C in the Southeast Region went undiagnosed (Figure 1 C).

On the municipal level, a decrease in the number of diagnoses was observed in 3,211 municipalities, accounting for 85.5% of the notifying municipalities, i.e., excluding those that did not report any cases during the period from 2015 to 2020 (n = 1,808; 32.5%). The 545 municipalities with an increased number of diagnoses have small populations and little expression in the number of cases of hepatitis C; together, they accounted for only 2.6% (n = 3,332) of cases during that period (Figure 1 D).

Due to the pandemic, health services have had to reallocate professionals and suspend outpatient care and surgeries in order to meet the growing hospitalization demand stemming from severe acute respiratory syndrome. Moreover, due to concern of contracting COVID-19 at health services, patients have delayed seeking medical care when symptoms appear or when they have been exposed to risk factors. As a result of these changes, there have been negative impacts on surveillance programs and detection of new cases of several diseases [4,10].

If the challenges to eliminating hepatitis C were momentous before the pandemic, this plan has now become even more challenging. The COVID-19 pandemic has jeopardized the Brazilian plan for eliminating hepatitis C by 2030. Thus, it is crucial, with the assistance of advances in COVID-19 vaccination in Brazil, to concentrate efforts to resume actions to control hepatitis C throughout the country, focusing on diagnosis and treatment of new cases.
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Figure 1. Impact of the COVID-19 pandemic on diagnosis of hepatitis C in Brazil. (A) Hepatitis C incidence rate (B) P-score for number of cases and incidence rate of HCV in the Brazilian population (C) P-score for number of cases and incidence rate of HCV by region (D) P-score for number of cases and incidence rate of HCV by Brazilian municipality.