EPIDEMIOLOGICAL MAP: KNOWLEDGE ABOUT HEPATITIS B AND C INFECTION IN THE MUNICIPALITY OF ANÁPOLIS, GOIÁS

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ABSTRACT

OBJECTIVE: To analyze the spatial distribution of Hepatitis B and C cases in the municipality of Anápolis, Goiás. **METHOD**: A quantitative, descriptive, observational, and cross-sectional study was conducted using secondary data provided by the Anápolis Health Department. Geographical and temporal patterns were described with the aim of guiding more effective public health strategies. **RESULTS:** Central neighborhoods and the northern zone of Anápolis, such as Centro, Jaiara, and Jardim América, had high incidences of both infections, suggesting areas of greater vulnerability and in need of specific preventive measures. **CONCLUSION:** To reduce the incidence of hepatitis B and C in Anápolis, it is crucial to implement public health policies that include awareness campaigns, vaccination, and improvements in access to diagnostic and treatment services, especially in the most affected areas. These actions can help control the transmission of infections and improve the health of the local population.

Keywords: Hepatitis; Hepatovirus; Epidemiology

INTRODUCTION

Viral hepatitis is an important public health problem with global distribution and is considered the leading liver disease for two main reasons: its high prevalence in the population—with areas of high endemicity, mainly in Asian, Latin American, and African countries—and its broad clinical and prognostic spectrum (CELLA *et al*., 2015; VIANA *et al,* 2017).

Viral hepatitis is caused by numerous hepatotropic etiological agents, and its transmission, progression, prognosis, treatment, and epidemiology vary according to the etiological agent. (FERREIRA; SILVEIRA, 2004; VIANA *et al*, 2017).

Parenteral and sexually transmitted viruses (hepatitis B and C) will be the focus of this study due to their increased epidemiological relevance compared to other forms of viral hepatitis. (VIANA *et al*, 2017).

Regarding the epidemiology of HBV, according to data from the World Health Organization (WHO) from 2010, it was found that although its distribution is global, it

is more frequent in Asian countries. Its prevalence has decreased in countries with vaccination programs and the number of transmissions via blood transfusions and sexual contact has been declining. (DA SILVA *et al,* 2012; VIANA *et al,* 2017; PEREIRA, 2018).

In Brazil, it is estimated that there are almost 2 million chronic HBV carriers. The region with the highest incidence is the North (77% of cases) (DA SILVA *et al,* 2012). In recent years, with the implementation of the vaccination program, its incidence has been decreasing (DA SILVA *et al,* 2012; GRANDI; LOPEZ; BURATTINI, 2022). In Goiás, between 2000 and 2016, there were 206 deaths from hepatitis B as the primary cause and 250 as an associated cause, while for hepatitis C, there were 516 deaths as the primary cause (GUIDA *et al,* 2018).

A study conducted in the municipality of Anápolis-GO showed an increase in the number of cases in recent years, as well as a prevalence of HCV cases, mainly of genotype 1, in the 30-50 age group, predominantly in males (BORGES *et al.*, 2022).

Given the scenario presented, this study aims to analyze the epidemiological data of the municipality of Anápolis, Goiás, regarding HBV and HCV (hepatitis B and C) infection.

METHODS

This study analyzes the distribution of hepatitis B and C cases in Anápolis, using data from the Health Department and Health Surveillance to clarify incidence/prevalence patterns. The research aims to assist in the formulation of public health strategies, prioritizing interventions in the most affected areas.

Quantitative, descriptive, observational, and cross-sectional in nature, the study is based on secondary data from 2019 to 2024, providing an overview of changes in hepatitis cases in the municipality. Data collection involved medical records of patients registered in the Sexually Transmitted Infections program at the Dr. Ilion Fleury Jr. Health Unit. Records of patients with hepatitis B or C were included, excluding those with incomplete information or outside the study period.

The analysis was limited by inconsistent data quality, which prevented detailed statistical analyses. Thus, the focus was on describing and interpreting the available

data to identify general trends and patterns, ensuring an adequate understanding of the information.

The data were anonymized to protect the privacy of individuals, and the use of the information was authorized by the Anápolis Health Department, in accordance with ethical standards, through official letter No. 121/2024 – SEMUSA/DIVIG/GEEPI. Limitations of the study include the variable quality of the data and the restriction of the applicability of the results to the context of Anápolis, limiting generalization to other regions.

The research was approved by the Ethics Committee on July 14, 2024, under CAAE 79490824.0.0000.5076, with opinion No. 6,947,882.

RESULTS

Table 1. Spatial Distribution of Hepatitis B and C Cases in Anápolis (2019-2024)

Neighborhoods	Type of infection	Incidence
Jaiara	Hepatitis B and C	High
Central	Hepatitis B and C	High
Jardim América	Hepatitis B and C	High
Jundiaí	Hepatitis B and C	High
Adriana Parque	Hepatitis B and C	Recurrent/Consistent
Alexandria	Hepatitis B	Recurrent
Boa Vista	Hepatitis B	Recurrent
Calixtópolis	Hepatitis B	Sporadic
Bouganville	Hepatitis B	Sporadic
Spring Park	Hepatitis B	Sporadic

* Own work

Spatial analysis of hepatitis B and C cases in Anápolis identified a high incidence of infections in neighborhoods such as Jaiara, Centro, Jardim América, and Jundiaí, indicating areas of greater vulnerability and possible risk factors, such as high population density and inadequate health practices. Between 2019 and 2024, neighborhoods such as Adriana Parque, Alexandrina, and Boa Vista also showed a significant recurrence of hepatitis B infections, suggesting the need for specific preventive measures for these areas.

The central region of Anápolis, including neighborhoods such as Centro, Jundiaí, and Jardim América, had a high concentration of cases, possibly due to higher population density and circulation of people, increasing the risk of transmission. Similarly, the northern zone, with neighborhoods such as Jaiara and Adriana Parque, showed consistent incidence of hepatitis B, standing out as priority areas for control and prevention.

Neighborhoods such as Calixtópolis, Bouganville, and Parque das Primaveras reported sporadic cases of hepatitis B, suggesting isolated outbreaks. However, the persistence of cases in neighborhoods such as Adriana Parque and Centro over the years reinforces the need for ongoing preventive measures. The distribution of hepatitis C cases follows a pattern similar to that of hepatitis B, with persistent infections in the same neighborhoods, indicating the need for interventions focused on local factors and risk behaviors to improve diagnosis and treatment.

CONCLUSION

The data show that hepatitis B and C remain public health problems in Anápolis. The infection is more concentrated in the central and northern regions of the city. These results suggest that factors such as high population density, unfavorable socioeconomic conditions, risk behaviors, and limited access to health services contribute to the transmission of these diseases.

To address these challenges, it is crucial to focus interventions in the most affected neighborhoods. Awareness campaigns, vaccination, and better access to diagnosis and treatment are essential to control the spread of hepatitis B and C. These measures should be implemented both in areas with the highest incidence and in less affected neighborhoods to prevent new outbreaks. Public health policies based on these data can reduce the incidence of viral hepatitis in Anápolis, with an emphasis on the central and northern regions, where cases are most persistent.

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