SOCIO-DEMOGRAPHIC PROFILE OF HEPATITIS B AND C INFECTIONS IN THE MUNICIPALITY OF ANÁPOLIS, GOIÁS

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ABSTRACT

Viral hepatitis B and C are the subtypes of greatest epidemiological relevance in Brazil, with high morbidity and mortality rates due to their clinical characteristics and complications. The aim of this study is to describe the epidemiological data of the municipality of Anápolis, Goiás, regarding hepatitis B and C infection. This is a descriptive, quantitative, observational, and cross-sectional study, using data provided by the Municipal Health Department of Anápolis from the Viral Hepatitis Notification Unit in the municipality. Data from notification forms were analyzed regarding the sex and age group of hepatitis B and C cases in the municipality from 2019 to 2024. For hepatitis B, 433 cases were reported during the study period, with a predominance among males (n=247) and in the 35–49 age group (n=157). As for hepatitis C, a total of 144 cases were reported, 85 of which were male, and the age group with the highest incidence was 50-64 years (n=50). It is concluded that in the municipality of Anápolis there is a higher incidence of hepatitis B compared to hepatitis C, and that for both types, cases are predominantly among males and adults.

Keywords: Hepatitis B; Hepatitis C; Epidemiology.

INTRODUCTION

Viral hepatitis is an important public health problem due to its high prevalence and broad clinical and prognostic spectrum. Viral hepatitis is caused by numerous hepatotropic etiological agents, with hepatitis B and C viruses being the subtypes of greatest epidemiological relevance. Hepatitis B virus (HBV) is a DNA virus of the *Hepadnaviridae* family, and hepatitis C virus (HCV) is an RNA virus of the *Flaviviridae* family. Both are transmitted parenterally, sexually, and vertically. HBV has a stable structure, which has enabled the creation of an effective vaccine currently used in global vaccination programs. However, due to its high genetic variability, it has not yet been possible to develop a vaccine against HCV (FERREIRA; SILVEIRA, 2004; DA SILVA *et al.,* 2012; VIANA *et al.,* 2017; BORGES *et al.*, 2022).

As for epidemiology, estimates indicate nearly 2 million chronic HBV carriers in Brazil. In recent years, with the implementation of the vaccination program, the incidence of HBV has been declining in the country. The incidence of HBV infection is predominant in adulthood and higher in men than in women. Regarding HCV, in Brazil, there are an estimated 3 million hepatitis C carriers, with the most prevalent age group

being between 10 and 69 years, peaking at 40 years. In Goiás, between 2013 and 2017, 5,607 cases of hepatitis B were reported, making it the most prevalent serotype, while 1,713 cases of hepatitis C were reported, with these frequencies likely being underestimated (DA SILVA *et al.,* 2012; VIANA *et al.,* 2017; PEREIRA, 2018; BARBOSA; FERRAZ, 2019; GRANDI; LOPEZ; BURATTINI, 2022).

Considering that Brazil has high morbidity and mortality rates from HBV and HCV infections, associated with a low number of scientific publications and scarce regional epidemiological surveys on the subject, hepatitis B and C can be considered relevant public health problems and, moreover, conditions neglected by the health service (NELSON *et al.*, 2011; KOCOGLU *et al.,* 2018; GRANDI; LOPEZ; BURATTINI, 2022). In view of the above, this study aims to describe the epidemiological data of the municipality of Anápolis, Goiás, regarding hepatitis B and C infection.

METHODS

This is a quantitative, descriptive, observational, and cross-sectional study with secondary data from the Municipal Health Department of Anápolis, Goiás, referring to the Notification Unit for viral hepatitis in the municipality, made available through Official Letter No. 121/2024 - SEMUSA/DIVIG/GEEPI. This study included sociodemographic information (age group and gender) available in hepatitis B and C notification forms registered from 2019 to the first half of 2024 in Anápolis-Goiás; the sample comprised individuals from all age groups and both sexes, with no distinction by race, color, education, or sexual orientation. The research was submitted to and approved by the Research Ethics Committee under: CAAE 79490824.0.0000.5076 with opinion number 6,947,882 on July 14, 2024. The data collected were tabulated in Microsoft Excel (Office 2021) to describe the sociodemographic profile of hepatitis B and C in Anápolis and provide updated epidemiological information for the municipality.

RESULTS

The total number of hepatitis B cases reported in the municipality of Anápolis-Goiás from 2019 to the first half of 2024 was 433; the highest incidence occurred in 2019 and 2021, with 87 notifications in each year. The lowest incidences were

observed in the first half of 2024 (n=42) and in 2020 (n=56). There was a predominance of cases among males in all years, totaling 57% (n=247) of notifications (Table 1).

Table 1. Number of hepatitis B cases by sex in the municipality of Anápolis-GO

Year of notification	Men	Female	Total
2019	45	42	87
2020	36	20	56
2021	48	39	87
2022	45	32	77
2023	50	34	84
2024	23	19	42
Total	247	186	**433**

Source: Official Letter No. 121/2024 - SEMUSA/DIVIG/GEEPI

The age groups with the highest numbers of hepatitis B cases were: 35–49 years (n=157), 50–64 years (n=116), 20–34 years (n=88), and 65–79 years (n=44). Few cases were observed in individuals under 20 years (n=4), followed by an increase in adulthood with a peak between 35–49 years and a subsequent decline in notifications, particularly after 79 years of age (n=24) (Table 2).

Table 2. Number of hepatitis B cases by age group in the municipality of Anápolis-GO

Year of notification	< 1 year	10-14	15-19	20-34	35-49	50-64	65-79	80	Total
2019	0	1	2	23	26	23	6	6	87
2020	0	0	0	13	19	13	7	4	56
2021	0	0	0	12	35	25	10	5	87
2022	1	0	0	22	25	16	7	6	77
2023	0	0	0	10	37	27	9	1	84
2024	0	0	0	8	15	12	5	2	42
Total	1	1	2	88	157	116	44	24	**43**

Source: Official Letter No. 121/2024 - SEMUSA/DIVIG/GEEPI

Regarding hepatitis C in Anápolis-Goiás, 144 cases were reported between 2019 and the first half of 2024. The year 2023 had the highest number of notifications (n=31), followed by 2022 (n=30). The lowest numbers were in the first half of 2024 (n=15) and in 2020 (n=19). Of the reports, 85 were male and 59 were female (Table 3).

Table 3. Number of hepatitis C cases by sex in the municipality of Anápolis-GO

Year of Notification	Male	Female	Total
2019	13	12	25
2020	10	9	19

2021	16	8	24
2022	20	10	30
2023	17	14	31
2024	9	6	15
Total	85	59	**14**

Source: Official Letter No. 121/2024 - SEMUSA/DIVIG/GEEPI

Regarding the number of hepatitis C cases by age group, there was a predominance in adults, with the highest values found among those aged 50-64 (n=50) and 35-49 (n=45). The age groups with the lowest number of reported cases were under 20 years (n=2) and over 79 years (n=5) (Table 4).

Table 4. Number of hepatitis C cases by age group in the municipality of Anápolis-GO

Year of Notification	15-19	20-34	35	50	65-79	80	Total
2019	0	4	8	10	2	1	25
2020	0	4	8	4	2	1	19
2021	1	3	9	6	5	0	24
2022	0	6	9	10	4	1	30
2023	1	5	9	10	4	2	31
2024	0	2	2	10	1	0	15
Total	2	24	45	50	18	5	**14**

Source: Official Letter No. 121/2024 - SEMUSA/DIVIG/GEEPI

CONCLUSION

It is concluded that, based on data provided by the Municipal Health Secretariat of Anápolis-GO, there was a higher incidence of hepatitis B than hepatitis C in the municipality between 2019 and the first half of 2024. During this period, the epidemiological profile of hepatitis B and C predominantly comprised adult males, which is consistent with the literature. In the present study, a peak incidence was observed for hepatitis B between 35 and 49 years of age and for hepatitis C between 50 and 64 years of age. As a limitation, the data for 2024 were restricted to the first half of the year, which may bias incidence interpretation because a full 12-month period was not included. Furthermore, the data are subject to errors in the completeness and standardization of viral hepatitis notification forms. However, the study has been validated by the literature and is of great value for providing updated epidemiological information for the municipality, allowing new health strategies to be developed in line with the sociodemographic profile of hepatitis B and C in Anápolis.

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