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Viral Hepatitis B and C: Epidemiological, Clinical and Paraclinical Aspects in the Internal Medicine Department of KARA University Hospital in Togo

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Abstract

Introduction: Viral hepatitis B and C constitute real public health problems worldwide. The objective of this work was to describe the epidemiological, clinical and paraclinical aspects of viral hepatitis B and c in the internal medicine department of Kara University Hospital. Method: this was a retrospective descriptive study carried out in the Internal Medicine department of Kara University Hospital, over a period of 3 years from March 2020 to April 2023. It included all patients seen in consultation or hospitalized for hepatitis viral B and/or C. Results: A total of 57 patients were included in our study. The average age was 44.30 years ± 16.75 and the M/F sex ratio was 1.38. Married people were in the majority 63.2%. The circumstances of the discovery of viral hepatitis B and C were dominated by abdominal pain in 35.1% of cases and hepatomegaly in 29.8% of cases and in 33.3% of cases, it was during screening voluntary. Patients with viral hepatitis B only accounted for 64.9% of cases; those with only viral hepatitis C represented 31.6% of cases and 3.5% of cases had HVB/HCV co-infection. We recorded 36.8% complications including 52.4% liver cirrhosis and 47.6% hepatocellular carcinomas. During the evolution, there were 03 deaths. Conclusion: the prevalence of hepatitis B and C virus carriage in patients followed in internal medicine at Kara University Hospital is high. It is therefore essential to put in place treatment and prevention strategies against these viruses.

Keywords

Hepatitis B, Hepatitis C, Internal Medicine, Kara University Hospital

1. Introduction

Chronic hepatitis due to hepatitis B and C viruses affects a large number of individuals and causes a high disease burden and mortality. Chronic viral hepatitis is a serious but underestimated global public health problem [1]. Hepatitis B and C viruses (HBV and HCV) are the leading causes of liver disease worldwide [2] [3]. Both induce acute hepatitis by transient infection and chronic liver disease by persistent infection [4]. Chronic infection with hepatitis B virus (HBV) and/or hepatitis C virus (HCV) sometimes causes liver cirrhosis and hepatocellular carcinoma (HCC) [5]. It is estimated that 75% of all HCC cases are due to chronic infection with hepatitis B (HBV) or hepatitis C (HCV) viruses [6] [7].

Worldwide, more than two billion people are infected with HBV alone, of whom approximately one million die each year. The hepatitis C virus affects approximately 200 million people. It is estimated that approximately 240 million people have chronic hepatitis B virus infection and 150 million people have chronic hepatitis C virus infection [1].

The endemicity of viral hepatitis B (HVB) varies worldwide. Africa is one of the highly endemic regions. Most parts of West and East Africa are highly endemic areas with chronic infection [8].

Despite the existence of effective means of control, hepatitis B and C remain one of the leading causes of mortality in sub-Saharan Africa [9].

Togo Kolou *et al.* [10], during a screening campaign in Lomé, found that the prevalence of HVB and viral hepatitis C (HCV) was high at 16.36% and 5% respectively. 64% of cases. Bagny *et al.* for their part found that the etiologies of hepatocarcinoma were dominated by viral hepatitis B and C [11]. The present study aimed to study the epidemiological, clinical and paraclinical aspects of viral hepatitis B and C in the Internal Medicine department of Kara University Hospital.

2. Method

We conducted a retrospective descriptive study carried out in the Internal Medicine department of Kara University Hospital over a period of 3 years from March 2020 to April 2023. The study population consisted of patients carrying HBs Ag and/or Anti-HCV Ab received in consultation. Recruitment was systematic and exhaustive. Patients whose HBsAg was positive were declared positive for hepatitis B, and positive for hepatitis C were patients whose anti-HCV Ab was positive. The positive diagnosis of hepatitis B and/or C was made either using rapid immunochromatographic tests or Elisa tests.

Data were collected on a pre-established form from medical records. For each patient, the following information was recorded:

- The epidemiological profile: age, sex, educational level, and marital status.
- The clinical profile: medical history, circumstances of discovery, clinical symptoms
- The biological profile: HBsAg, Anti-HCV Ac, HBeAg, Anti-HBc Ac, viral

load, Transaminase.

Data collection was done using a survey form. The data were entered by Epi-Data 3.1 software, then analyzed with SPSS 17.0 and EXCEL software.

3. Ethical Consideration

An inclusion number was assigned to each patient and then recorded on a document. It is the only document allowing the correspondence between a patient's first and last name and their inclusion number to be established. This document is kept by the department supervisor in a protected location, thus ensuring the anonymity of the patient.

4. Results

A total of 57 patients presented with viral hepatitis including 37 cases (64.91%) of HVB, 18 cases (31.58%) of HCV; 2 patients (3.51%) presented with B + C co-infection.

The average age was 44.30 years ± 16.75 with extremes of 15 and 78 years. The most represented range was that of [15 - 35[for HBV and [35 - 55[for HCV (Figure 1). Men represented 57.9% of cases with a M/F sex ratio of 1.38.

According to the level of education, 40.3% of patients had a secondary level, 35.1% a higher level, 15.8% a primary level and 8.8% had received no education. Civil servants represented 24.5% of patients. Among the patients, 63.2% were married, 22.8% single and 14% widowed.

The patients' history consisted of diabetes in 17.5% of cases, high blood pressure in 22.8% of cases and HIV in 7% of cases. A proportion of 26.3% of patients took alcohol occasionally and 14% took it regularly.

Regarding the reasons for consultation, the majority of patients with viral hepatitis B consulted for the positivity of HBs Ag (57.6%) or anti-HCV antibodies (53.4%).

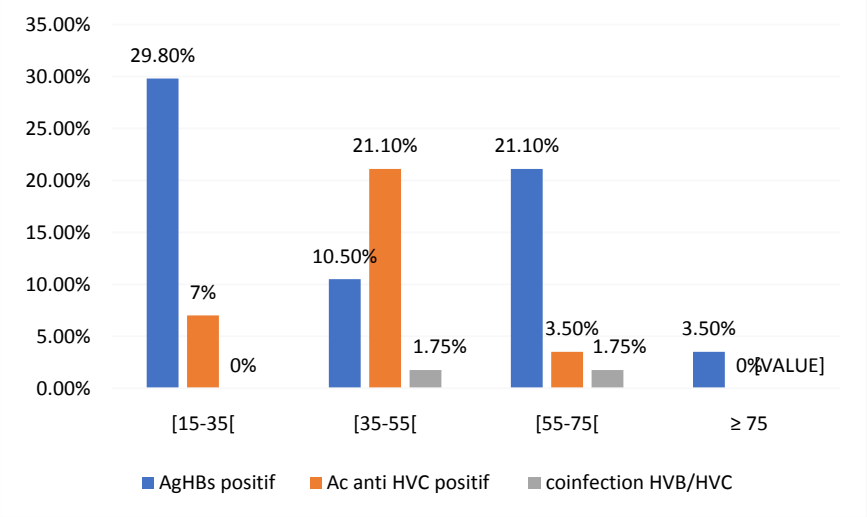

Figure 1. Distribution of viral hepatitis according to age groups.

The circumstances of the discovery of viral hepatitis B and C in our study were abdominal pain in 35.1% of cases and hepatomegaly in 29.8% of cases. Note that in 33.3% of patients, it was during voluntary screening (Table 1).

Among the 57 patients who tested positive for hepatitis B and C viruses; 64.9% were positive only for viral hepatitis B; 31.6% had viral hepatitis C only and 3.5% of cases had HVB/HCV co-infection.

In the 39 (68.4%) patients who tested positive for HVB, an assay for HVB viral markers (HBeAg, anti-HBc Ab, anti-HBs Ab) was carried out. All these patients had chronic viral hepatitis B, 43.2% of which were active. None of them were in the healing phase.

The viral load was requested in all patients (100% of cases) who tested positive, but only 36 (63.2%) were able to carry it out, including 19 (51.4%) cases of hepatitis B, 15 (83.3%) cases of hepatitis C and 02 (100%) HVB/HCV coinfection. The viral DNA of viral hepatitis b was greater than 2000 IU/ml in 80.9% of cases, and the viral RNA of viral hepatitis C was noted in 82.4% of cases. The results are shown in Table 2.

An assessment was requested for all patients in our study. These were aspartate aminotransferase (ASAT), alanine aminotransferase (ALT), gamma-glutamyl transpeptidase (ɣGT), and alkaline phosphatases (PAL). Of the 57 patients, only 48 (84.2%) were able to carry out this assessment. AST was elevated in 36 patients (75.0%), ALT in 31 patients (64.6%), ɣGT in 35 patients (72.9%), and ALP in 33 patients (68.8%). We completed the analyzes with the αFP assay carried out on 25 patients, 12 of whom had high figures.

The treatment of viral hepatitis C involves the use of direct antivirals directed against HCV for a period of 3 months, which allows a cure for hepatitis C in the majority of cases. The cost of treatment was high, only 6 patients out of the 17 who had achieved the viral load, or 35.29% of cases, had been treated. The evolution was favorable with an undetectable control viral load.

Table 1. Distribution of patients according to the circumstances of discovery.

	Workforce	(%)
Voluntary screening	19	33.3
Abdominal pain	20	35.1
Hepatomegaly	17	29.8
IMO*	12	21
Liver cytolysis	12	21
Ascites	11	19.3
Hepatic cholestasis	2	3.5
Upper digestive hemorrhage	4	7
Jaundice	2	3.5

* IMO: edema of the lower limbs.

Table 2. Summary of the results of paraclinical examinations.

	Workforce	(%)
Hepatitis B positive		
Male	20	50.1
Feminine	17	45.9
Total	**37**	**100**
Hepatitis C positive		
Male	11	31.1
Feminine	7	38.9
Total	**18**	**100**
HVB/HCV coinfection		
Male	2	100
Feminine	0	0
Total	**2**	**100**
HBeAg		
Positive	16	43.2
Negative	21	56.8
AntiHBc Ab		
Positive	37	100
Negative	00	00
Anti-HBs Ac		
Positive	00	00
Negative	37	100
HVB viral load		
<2000	4	19.1
[2000 - 100,000[	10	47.6
≥100,000	7	33.3
HCV viral load		
<2000	3	17.6
[2000 - 100,000[	6	35.3
≥100,000	8	47.1

As for the treatment of hepatitis B, 17 patients who had a viral load greater than 2000 copies were placed on Tenofovir.

During screening and during the evolution we recorded 21 (36.8%) complications made up of 11 (52.4%) cases of liver cirrhosis and 10 (47.6%) cases of hepatocellular carcinoma; among which we recorded 03 (14.3%) deaths.

5. Discussion

Some files were incomplete, and we were unable to identify the risk factors for the occurrence of viral infections B and C. The hepatitis B virus is sometimes associated with hepatitis Delta, we also did not detect a superinfection with the hepatitis D virus. This constitutes a limit to our study.

The average age of our patients was 40.30 years. Our result is similar to that of Tao *et al* in Burkina who found an average age of 41.5 years [12] [13]. The most represented range was that of [15 - 35[for hepatitis B and [35 - 55[for hepatitis C. The most frequent mode of transmission is sexual, hepatitis occurs most often in subjects sexually active young people. There was a male predominance with

an M/F sex ratio of 1.38. Male predominance has also been reported in several other studies in Africa. Kamangu NE *et al.* in 2016 in the Democratic Republic of Congo [13] and Salamata Diallo [14] in 2022 in Senegal respectively reported a male predominance of 85.6% and 46.2% for hepatitis C. In Tanzania, Semvua B. Kilonzo [15] reported in 2023 a 74.1% male predominance of HBV. These studies, like ours, suggest that viral hepatitis is mainly present in men. According to Camara Toumin [16], male predominance is linked to men's lifestyle with regard to hepatitis risk factors, in particular excessive consumption of alcohol and tobacco, which also lead to risk-taking on the sexual level.

Depending on marital status, the present study shows that married people are the most affected, representing a proportion of 63.2% of the population studied. Our results are superimposable to those of other authors who found respectively 62.6% of married people in Mali [17] and 60% in Algeria [18]. This high rate within the married group can be explained by unprotected sexual relations in married couples associated with the same factors mentioned for the male predominance of the condition. Co-infection with HIV was found in 7% of cases during this study. This proportion is higher than that of Cissoko in Mali where hepatitis and HIV co-infection was 4.1% [17].

Two main circumstances led to the discovery of viral hepatitis B and C in our study. These were abdominal pain in 35.1% of cases and hepatomegaly in 29.8% of cases. Hepatomegaly represented 17.6% of Camara's study population [16], a proportion similar to ours. In his series which focused only on hepatitis B, he reported abdominal distention in 24.4%, a rate also close to that of abdominal pain in our study. Cissoko in Mali [17] on the other hand reported a higher rate of abdominal pain in patients with hepatitis B with 49.3% of patients complaining of it. According to the literature, the common functional signs of viral hepatitis are asthenia, anorexia, icteric syndrome and abdominal pain [17] [19] [20]. It is the last symptom that predominated in our study.

Viral load testing was performed in 36 (63.2%) patients in our study, including 19 HBV carriers and 2 carriers of HBV/HCV co-infection. The determination of hepatitis B markers was carried out in the 37 carrier patients in the study population. Among the latter, 43.2% were chronic carriers, due to the positivity of anti-HBe antibodies. In Salamata Diallo's study [14], 59 patients (8.1%) were chronic carriers of HBV infection. This lower result than ours may be linked to the small size of our sample. Indeed, Diallo *et al.* carried out their study over a period of 5 years (January 1, 2010 to December 31, 2014) which made it possible to include 728 patients carrying hepatitis B. The evolution was made of complications in 21 (36.8%) patients in the present study. There were 11 (52.4%) cases of liver cirrhosis and 10 (47.6%) cases of hepatocellular carcinoma among which we recorded 03 (14.3%) deaths. The progression of HBV and HCV infection towards chronicity is well-known [21] [22] [23]. According to the study by Mallem [24] which focused only on HBV, the factors favoring the progression towards cirrhosis are male gender, advanced age, viral load level and diabetes. The same

results were reported in Morocco, where the age limit of 40 years was well specified [25]. In S Diallo [14] whose study focused only on HCV in 2022 in Senegal, the cirrhotic rate was 19.2%. The rate of HCC in our study is much higher than that reported by Zemour in Algeria [18] in whom only 6 people out of the 271 in the study, or 2.2%. Several reasons can explain this difference. Algeria is a more economically advanced country than Togo, the prevention measures including vaccination, screening and treatment would be better than in Togo. In addition, our study was carried out in a semi-rural area where patients are more oriented towards alternative medicine, therefore coming for consultation at an advanced stage of the disease. These reasons explain, among other things, the relatively high rate of deaths in our study.

6. Conclusion

Our study showed that the prevalence of hepatitis B and C virus carriage among patients followed in internal medicine at Kara University Hospital is high. It is therefore essential to put in place treatment and prevention strategies against these viruses. Concerning the hepatitis B virus (HBV), an effort must be made to promote universal vaccination and reduce the risk of maternal-fetal transmission in our country, if we are to hope to eliminate viral hepatitis as a serious threat to public health. Elimination of HCV encounters difficulties that differ from HBV because curative treatment is available, but difficult to access due to its cost.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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